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Literature references in [ ] refer to the *Review of Medical and Veterinary Mycology*. *B.H., Bulletin of Hygiene; R.A.M., Review of Applied Mycology; T.D.B., Tropical Diseases Bulletin; V.B., Veterinary Bulletin in which alternative abstracts can be found.*

1. **Annual Report of the Division of Laboratories and Research, New York State Department of Health, 1959.**—135 pp., 1960.

In this report [cf. **3**, No. 1393] C. H. Greene & M. A. Gordon (pp. 39–40) describe the modification of Ouchterlony's double diffusion gel precipitation test now used for histoplasmosis in place of the quantitative complement-fixation test. The histoplasmin used is a purified concentrate prepared from the broth filtrate of 6-month mycelial phase cultures of *Histoplasma capsulatum* by treating with twice its volume of cold acetone, centrifuging at 2,500 r.p.m. for 20 min. and dissolving the precipitate in 0·85% NaCl to ½ the original vol. Of 552 sera from patients with culturally proven histoplasmosis or strong clinical and epidemiological evidence of histoplasmosis, blastomycosis (*Blastomyces dermatitidis*), tuberculosis, or coccidioidomycosis (*Coccidioides immitis*), 67 positive by complement-fixation included 4 which were negative by gel precipitin while 455 negative by complement-fixation included 55 which were positive by the gel precipitin test.

C. H. Greene & L. S. DeLalla (p. 41) describe their efforts to separate and purify crude mycelial phase histoplasmin resulting in the acetone precipitation technique used above.

Rachel Brown & Elizabeth L. Hazen (pp. 50–52) describe capacidin, a N-containing polyene of the pentene group, produced by an unidentified streptomycete from soil. Capacidin inhibited a wide range of pathogenic and saprophytic fungi at 25 μg. or less/ml. Its fungicidal activity against *Candida albicans* was markedly decreased in the presence of defibrinated horse blood or serum. 100 μg./ml. haemolysed red blood cells in 24 hr. The LD_{50} to mice was 4·16 (intraperitoneally) and 7·4 mg./kg. (subcutaneously).

S. Bullivant & Mercedes R. Edwards (pp. 56–57) made an electron microscopic study of the changes which occur in the myocardium of mice with myocarditis in experimental *C. albicans* infection.

G. A. Edwards & Mercedes R. Edwards (p. 57) describe the structure of yeast-like cells of *B. dermatitidis* and *B.* [*Paracoccidioides*] *brasiliensis* as seen in electron micrographs of thin sections [cf. **4**, No. 102].

G. N. Little & Mercedes R. Edwards (p. 58), in a study of the relative pathogenicity of *P. brasiliensis* for hamsters, guinea-pigs, and mice, found that hamsters were most susceptible and showed disseminated infection with extensive lesions in internal organs, thus resembling the human reaction to this fungus.

In the sect. on diagnostic mycology M. A. Gordon & G. N. Little (pp. 93–94) report that the number of specimens increased 40% over the year before and give details of the specimens received.

M. A. Gordon & C. H. Greene (pp. 94–95) summarize the results of serological tests for histoplasmosis and blastomycosis.

2. **Second Conference on Medical Mycology.**—*Ann. N.Y. Acad. Sci.*, **89**, Art. 1, pp. 1–282, 60 fig., 34 graphs, 1960.

This monograph is a collection of valuable papers presented at the Second Conference on Medical Mycology [cf. **1**, No. 1810], 11–12 Jan. 1960 at the N.Y. Acad. Sci., under the chairmanship of C. W. Emmons. There are 4 parts, comprising papers on general, new, and experimental mycoses; epidemiology, biochemistry, and physiology; immunology of mycoses; and therapy. Each paper has a useful bibliography.

a. Lie Kian Joe & Njo-Injo Tjoei Eng (Dept Parasitology, Sch. Med., Univ. Indonesia): **Subcutaneous phycomycosis : a new disease found in Indonesia** (pp. 4–16), find the term phycomycosis [cf. **3**, Nos. 1356, 1913] useful for mycoses where no culture was obtained, but where tissue sections show fungal structures characteristic of the class. Subcutaneous phycomycosis is a characteristic disease entity, so far observed only in children. Its chief clinical feature is a localized, painless, subcutaneous swelling growing gradually to attain extensive proportions. The histological picture is a granulomatous reaction characterized by the presence of numerous eosinophils, and smudgy eosinophilic granular tissue necrosis round the hyphae. The disease is reviewed under the headings clinical characteristics, histopathology, and isolation of the fungus. The 6 cases mentioned include 3 due to *Basidiobolus ranarum* [**2**, No. 149] and 1 attributed to an unidentified phycomycete.

b. Margarita Silva (Coll. Physicians, Columbia Univ., N.Y.): **Growth characteristics of the fungi of chromoblastomycosis** (pp. 17–29) collates the criteria, some old and some new, which the non-specialist may find helpful in making an initial differentiation between the agents of chromoblastomycosis and related saprophytes and pathogens. The agents of chromoblastomycosis used in the experiments were *Fonsecaea* [*Phialophora*] *pedrosoi*, *F.* [*P.*] *compacta*, *F.* [*P.*] *dermatitidis*, *Cladosporium carrionii*, *P. verrucosa*, and *Torula poikilospora*, the saprophytes *C. sphaerospermum* (*langeronii*), *C. elatum*, *P. obscura*, *P. richardsiae*, *Pullularia pullulans*, and 6 other *Cladosporium* isolates, and the agents of mycetoma *Phialophora jeanselmei* and *C. gougerotii*. Some saprophytic cladosporia have growth rates comparable with those of known pathogens. Bactopeptone was superior to neopeptone in Sabouraud's agar for the fungi of chromoblastomycosis. With few exceptions, saprophytes as well as pathogens grew well on cycloheximide [actidione] media at 25° C. Of 17 isolates, representing a cross-section of the fungi under study, which failed to grow on Sabouraud bactopeptone agar at 37°, all attained moderate to luxuriant growth on difco cystine heart-haemoglobin (CHH) agar at 37°, as did nearly 50 other isolates. Serial streaking of mould phase cultures of 85 isolates on CHH agar at 37° gave partial conversion to parasitic morphology.

c. L. Ajello (Communicable Dis. Center, Public Health Service, Atlanta, Ga): **Geographical distribution and prevalence of the dermatophytes** (pp. 30–38) attempts to outline the distribution of the dermatophytes, which he considers under 2 main groups, viz. the 'cosmopolitan' and the 'geographically limited', each of these groups being broken down into anthropophilic, zoophilic, and geophilic sections.

d. D. B. Louria & H. G. Browne (Cornell med. Div., Bellevue Hosp., N.Y.): **The effects of cortisone on experimental fungus infections** (pp. 39–46) report experiments designed to show the relative propensities of various fungi to spread under the influence of cortisone. Under similar experimental conditions *Candida* infections in mice were enhanced to a far greater degree than *Histoplasma capsulatum* or *Cryptococcus neoformans* infections. The renal location of moniliasis in normal (untreated) mice and the limitation of infection almost exclusively to the kidneys in cortisone treated mice infected with str. 851 (of low virulence) is explained by the ability of the parasite to gain access to the renal tubular lumen and to grow within this protected site.

2. *e.* J. Schwarz, G. L. Baum, & H. Floyd (Clin. Lab., Jewish Hosp., Cincinnati, Ohio): **The pathogenesis of 'epidemic' histoplasmosis** (pp. 47–58) state that the disease is acquired by the inhalation of spore-containing dust. When the air is densely loaded with spores a special clinical, radiological, and anatomical picture is seen, consisting of multiple primary foci in the lung. Seven cases of multiple widespread densities in the lung are given, 1 definitely proved by biopsy to be active, and 1 shown at autopsy to have multiple healed primary lesions. The fungus was demonstrated microscopically in both.

f. N. Van Uden (Bot. Inst., Univ. Lisbon): **The occurrence of Candida and other yeasts in the intestinal tracts of animals** (pp. 59–68) considers that yeasts, though widespread in the soil, seldom multiply there, but simply survive until the arrival of sugar-containing natural substrates permits further growth. Among yeasts surviving in the soil the intestinal ones may be recognized by use of an isolation medium sufficiently rich in growth factors to permit growth of such exacting spp. as *C. slooffii*, and an isolation temperature appropriate for thermophilic yeasts. The yeast floras of the intestine of various animal spp. are discussed [cf. **3**, No. 896 *et passim*].

g. Lucille K. Georg (Communicable Dis. Center, Atlanta, Ga): **Epidemiology of the dermatophytoses; sources of infection, modes of transmission and epidemicity** (pp. 69–77) considers, *inter alia*, the importance of animals as reservoirs of ringworm infection; forms of *Trichophyton interdigitale*; and *T. rubrum* infections as observed in India and in temperate countries.

h. H. W. Larsh (Communicable Dis. Center, Kansas City): **Natural and experimental epidemiology of histoplasmosis** (pp. 78–90) reports cases in which point sources of histoplasmosis infection were revealed by study of the findings of skin test surveys. Experimental histoplasmin sensitivity was elicited in guinea-pigs by subcutaneous or intranasal inoculation of whole cells or of cell walls, or by exposure to whole cells or cell fragments in aerosols, using the Henderson apparatus.

i. C. W. Emmons & W. L. Jellison (National Inst. Allergy and Infectious Dis., Bethesda, Md): **Emmonsia crescens sp. n. and adiaspiromycosis (haplomycosis) in mammals** (pp. 91–101) note that *E. parva* [cf. **3**, No. 1058] is known at the present time only from animals in the arid south-west of the U.S.A. and possibly Africa. The new species *E. crescens*, distinguished by the greater size (200–486 μ as against 14–60 μ) and thicker wall (10–70 μ as against 2 μ) of the parasitic spherule, for which the term adiaspore is proposed, the lower temp. required for adiaspore production (37° against 40°), and the multinucleate condition of the adiaspores, has been found in animals in the northern U.S.A., Canada, England, Europe, Africa, and S. America where it has been referred to as *E. parva*. An isolate from the rodent *Arvicola terrestris*, collected at Hamar, Norway, is designated as the type. The pulmonary disease is called adiaspiromycosis to signify the absence of multiplication and dissemination in the animal host.

j. G. W. Lones & C. L. Peacock (National Inst. Allergy and Infectious Dis., Bethesda, Md): **Studies of the growth and metabolism of Coccidioides immitis** (pp. 102–108) describe experiences with the prolonged culture by serial transfer of the spherule form of *C. immitis* str. M-11, and describe the breakdown of glucose by this fungus. Ethanol was produced under anaerobic conditions.

k. D. Pappagianis & G. S. Kobayashi (Naval biol. Lab., Berkeley, Calif.): **Approaches to the physiology of Coccidioides immitis** (pp. 109–121) review present knowledge of the subject.

l. S. G. Bradley & L. A. Jones (Dept Bact., Univ. Minn., Minneapolis): **Mechanisms of action of antibiotics** (pp. 122–133) discuss the physiological basis of antibiotic action, with particular reference to nystatin.

m. E. Drouhet, L. Hirth, & G. Lebeurier (Inst. Pasteur, Paris): **Some aspects of the mode of action of polyene antifungal antibiotics** (pp. 134–155) report *in vitro*

studies on the effects of amphotericin B in particular on respiration and the metabolism of proteins, nucleic acids, and P compounds by *Candida albicans*.

2. *n.* H. F. Hasenclever & W. A. Mitchell (Nat. Inst. Allergy and Infectious Dis., Bethesda, Md): **Virulence and growth rates of Cryptococcus neoformans in mice** (pp. 156–162) report mortality studies in mice, in which considerable variation in virulence between 3 virulent strs. was not correlated with capsule width.

o. Charlotte C. Campbell (Walter Reed Army Inst. Res., Washington, D.C.): **The accuracy of serologic methods in diagnosis** (pp. 163–177) reviews the serological findings in coccidioidomycosis, histoplasmosis, and [N. American] blastomycosis, the problem of cross reactions, and factors in the development of improved antigens.

p. L. Friedman & V. J. Derbes (Tulane Univ. Sch. Med., New Orleans, La): **The question of immunity in ringworm infections** (pp. 178–183) reviews present knowledge [cf. **3**, No. 975] and refers to 15 patients, cured of tinea capitis by griseofulvin treatment, who did not become reinfected when they returned to their homes, though there was every opportunity for reinfection.

q. E. E. Evans (Univ. Alabama med. Center, Birmingham): **Capsular reactions of Cryptococcus neoformans** (pp. 184–192) reports recent work [cf. **2**, 749] on the capsular reactions of this fungus with specific antibody and with polygalactosamine (APS) derived from *Aspergillus parasiticus*: both of these complement fixation reactions appeared to have potential value as cytological tools. Experiments in which the cell was fragmented mechanically revealed that the capsule was resistant to disintegration, apparently consisting of a firm gel. Similar gels were made in the test tube by dissolving relatively large amounts of type A polysaccharide in aqueous media.

r. S. Marcus, G. A. Hill, & R. A. Knight (Univ. Utah Coll. Med., Salt Lake City): **Antigens of Blastomyces** (pp. 193–201) present data suggesting that *B. dermatitidis* strs. vary quantitatively in mouse virulence, and that skin-reactive polysaccharides can readily be prepared in quantity from yeast phase broth of both virulent and avirulent strs.

s. J. H. Seabury & H. E. Dascomb (Louisiana State Univ. Sch. Med., New Orleans): **Experience with amphotericin B** (pp. 202–220) review present knowledge and assess the further prospects for this antibiotic. It is still too soon to draw conclusions as to its usefulness against systemic moniliasis and coccidioidomycosis. Some failures in the treatment of coccidioidomycosis, histoplasmosis, and blastomycosis are reported. Their experience suggests that where there are toxic side effects it is the kidneys which are most likely to be affected.

t. V. D. Newcomer, T. H. Sternberg, E. T. Wright, R. M. Reisner, E. G. McNall, & L. J. Sorensen (Univ. Calif. med. Center, Los Angeles): **The treatment of systemic fungus infections with amphotericin B** (pp. 221–239) review their experience with this antibiotic, with particular reference to coccidioidomycosis.

The same authors, **Treatment of systemic mycoses with orally administered pimaricin : preliminary report** (pp. 240–246), report their experience in the treatment of 10 patients with various mycoses, with the tentative conclusion that in its present form, and at doses acceptable to the patient, this antifungal antibiotic does not offer promise for the oral treatment of mycoses.

u. F. J. Roth (Univ. Miami Sch. Med., Fla): **Griseofulvin** (pp. 247–253) reviews present knowledge, and concludes that the availability of this specific agent for dermatophytoses, together with the fact that the course of therapy is prolonged, makes it imperative to obtain a really accurate diagnosis of a dermatological disorder before instituting therapy. Laboratory findings are ultimately the only criterion of the required dosage level and duration of treatment.

v. A. González-Ochoa (Inst. de Salubridad y Enfermedades Tropicales, Mexico City): **Griseofulvin in deep mycoses** (pp. 254–257) reports the results of treatment of 4 cases of actinomycotic mycetoma (*Nocardia brasiliensis*), 2 of chromoblasto-

mycosis (*Hormodendrum* [*Phialophora*] *pedrosoi*), 1 of severe primary pulmonary histoplasmosis, and 2 of sporotrichosis. Successful results [already noted: **3**, No. 1855] were obtained with sporotrichosis.

2. *w.* Elizabeth L. Hazen & Rachel Brown (Div. Lab. and Res. N.Y. State Dept Health, Albany): **Nystatin** (pp. 258–266) concisely review this antibiotic [which they discovered; cf. **1**, No. 1873].

x. A. L. Welsh (Coll. Med., Univ. Cincinnati, Ohio): **Tennecetin** (pp. 267–276) summarizes the general characteristics of this antifungal antibiotic derived from *Streptomyces chattanoogensis*, with reference to the literature [cf. **3**, No. 1402] and to his own experience in the treatment of tinea and moniliasis with tropical ointment, vaginal jelly, and pessaries. Results are encouraging, and the author considers that superficial infections might respond even better to formulations employing a vanishing lotion or ointment base, or both to give better penetration.

y. J. P. Utz (National Inst. Allergy and infectious Dis., Bethesda, Md): **Analysis of amphotericin treatment failures in systemic fungal disease** (pp. 277–282) reports an analysis of treatment failures with 41 infections in 40 patients. Important factors were early discontinuation of treatment, advanced disease, insufficient amounts of the drug, death from associated disease, pregnancy, steroid treatment, and essentially resistant infections.

3. Dey (N. C.). **Medical mycology including laboratory technique and therapeutic recipes.**—x+127 pp., 36 pl. (3 col.), 46 fig., Calcutta, U. N. Dhur & Sons Private Ltd., 15 Bankim Chatterjee Str., Calcutta 12, 1958.

After a general mycological introduction and a chapt. on mycoses the commoner mycotic infections of man (including important diseases not found in India) are dealt with in a series of chapt. arranged according to Vuillemins' classification of the fungi; each disease being treated under a number of standard headings. In conclusion there are appendices on technique and therapeutic recipes, and a general index.

4. Bissett (K. A.) & Davis (G. H. G.). **The microbial flora of the mouth.**—100 pp., 25 fig., London, Heywood & Co. Ltd., 1960. 22*s.* 6*d.*

This monograph summarizes the work on the bacterial flora of the mouth by the authors and their colleagues at Birmingham Univ. and findings of other investigators in this field. Chapt. 3 is devoted to *Actinomyces bovis* [*A. israelii*] and *A. odontolyticus*, Chapt. 6 to *Corynebacterium* and *Nocardia*, and Chapt. 14 to *Candida*. In conclusion there is a discussion of the oral flora in relation to disease, a useful bibliography (pp. 87–93), and a general index.

5. **Developments in industrial microbiology. Vol. I.**—267 pp., 26 fig., 25 graphs, New York, Plenum Press, 1960. $7.50.

The greater part of this vol. (the Proceedings of the 16th General Meeting of the Soc. for Industrial Microbiol., State Coll., Pa, 1959 and the first of an annual series) is concerned with work in the field of applied microbiological research.

L. R. Kneebone (Pa State Univ.): **Methods for the production of certain hallucinogenic agarics** (p. 109, Abstract only) describes how, in initial attempts to grow sporocarps of hallucinogenic agarics, conventional methods of commercial mushroom production were used. Satisfactory yields of *Psilocybe cubensis*, *Panaeolus sphinctrinus*, and *P. venenosus* were obtained. *Copelandia caerulescens* was grown on uncased horse manure compost, and *Psilocybe aztecorum* on an uncased compost consisting of supplemented sugar cane begasse. *P. mexicana* and *P. cubensis* produced sporocarps on potato dextrose-yeast extract agar slants after several weeks of incubation, and the latter also fruited on rye grain.

H. D. Sisler & B. W. Coursen (Dept Bot., Univ. Md.): **Effect of cycloheximide (actidione) on the metabolism and growth of fungi** (pp. 181–186) review present knowledge under the headings specificity, mitotic effects, effect of metals, effect of respiration and fermentation, reversal of toxicity, effect on protein and nucleic acid metabolism, and metabolism of C^{14} glucose.

Mary E. Pinkerton (Dept Dermat., Univ. Texas, Galveston): **Treatment of spontaneous ringworm in mice with griseofulvin** (pp. 245–247) notes the occurrence of spontaneous *Trichophyton mentagrophytes* infection in C-57 mice over 1 yr. old. These infections were progressive, with no tendency towards recovery.

Griseofulvin *per os* at 30 mg. (as 2 doses)/kg./day cured such infections in 2 mice, cultures becoming negative and hair growing again on the affected parts.

6. Neves (H.) & Do Carmo-Sousa (Lídia). **Medical and veterinary mycology in Portugal for 1949–1959.**—*Mycopathologia*, **13**, 2, pp. 135–152, 1960. [173 ref.]

From Sch. Med., Lisbon, and Laboratório Nacional de Investigação Veterinária, Lisbon, the authors briefly review the Portuguese literature on human cutaneous [cf. **4**, No. 26] and visceral mycoses and on veterinary mycology (pathology and technology).

7. Ciferri (R.), Caretta (G.), & Della Torre (B.). **Centro di Micologia Medica dell'Università di Pavia. Attività svolta nel triennio 1956–1959.** [Centre of Medical Mycology of the Univ. of Pavia. Activities during the 3-yr. period 1956–59.]—*Ric. sci.*, **30**, 6, pp. 832–836, 1960. [Fr., Engl., Germ. summ.]

A list of 1628 isolations from different parts of the human body with the numbers of fungi of each genus isolated from each different group of cases and the percentage of the total represented by these figures. In all, 48% positive cultural results were obtained. *Candida* was the genus most commonly isolated (*C.* spp. from 55%, and *C. albicans* alone from 33%, of the culturally positive cases).

8. Pospíšil (L.) & Krečmerová (Božena). **K otázce možného výskytu histoplasmosy, blastomykosy a coccidioidosy u nás.** [On the question of possible occurrence of histoplasmosis, blastomycosis and coccidioidomycosis in Czechoslovakia.]—*Čes. Mykol.*, **14**, 4, pp. 238–241, 1 map, 1960. [Engl. summ.]

Of 600 persons aged 18–80 given histoplasmin, blastomycin, and coccidioidin interdermal tests at dermat. Clinic, Brno, 1 (returned from Argentina) was positive to histoplasmin.

9. Carneiro (J. F.). **Micoses pulmonares no Brasil.** [Pulmonary mycoses in Brazil.]—*Rev. bras. Med.*, **17**, 3, pp. 216–231, 1960.

A review of the pulmonary mycoses [cf. **3**, No. 1394] other than S. American blastomycosis. Some previously unpublished observations include pulmonary cryptococcosis (*Cryptococcus neoformans*) simulating tumours and some cases with periods of latency lasting for several years; 4 cases of histoplasmosis (*Histoplasma capsulatum*) (suspected to be frequent in Brazil); a case of sporotrichosis (*Sporotrichum schenckii*) of the skin and bones with pulmonary metastasis; pulmonary aspergillomas are not rare and a case due to *Aspergillus fumigatus* is reported. Coccidioidomycosis and N. American blastomycosis have not been found.

10. Braude (A. I.), McConnell (J.), & Douglas (H.). **Fever from pathogenic fungi.**—*J. clin. Invest.*, **39**, 8, pp. 1266–1276, 9 fig., 1960. [12 ref.]

At the Dept Med., Univ. Pittsburgh, Pa, intravenous injections into rabbits of viable *Candida albicans*, *Blastomyces dermatitidis*, *Histoplasma capsulatum* and *Sporotrichum schenckii* produced fever but *Cryptococcus neoformans* did not. An immediate fever with these live cultures, beginning 1–3 hr. after injection and

lasting 7–8 hr., was also produced by autoclaved fungus cells or Seitz filtrates of the cultures. A delayed fever, beginning as late as 24 hr. after inoculation and persisting until death or recovery from infection was believed to be a consequence of infection of the tissues.

11. Jiménez (J. M.) & De Abate (J.). **Acción de las hormonas vegetales sintéticas en talófitas. I. Estudio sobre hongos patógenos in vitro.** [The action of synthetic plant hormones on thallophytes. I. *In vitro* studies on pathogenic fungi.]—*Rev. Biol. trop. S. José*, **7**, 2, pp. 225–229, 1959. [Engl. summ.]

At Univ. Costa Rica assays with the hormones 2,4-dichlorophenoxyacetic acid (2,4-D) and 2,4,5-trichlorophenoxyacetic acid (2,4,5-T) on Sabouraud glucose agar showed that 2,4-D had no effect on the growth of *Candida albicans*, *Microsporum gypseum*, or *Phialophora jeanselmei*. 2,4,5-T stimulated the growth of *C. albicans* at low concs. (47·5 μg./ml.) and was lethal at 190 μg./ml.; no stimulation of the other species was seen but *M. gypseum* was inhibited by 19 μg./ml. and *P. jeanselmei* by 12 μg./ml.

12. Pruniéras (M.) & De Beer (P.). **Le permanganate bleu Alcian (P.B.A.) dans la coloration des champignons sur coupe et sur culture.** [Blue Alcian permanganate (P.B.A.) for the staining of fungi in sections and in culture.]—*Bull. Soc. franç. Derm., Paris, 1960*, 2, pp. 336–340, 1960.

The results of the application of the above-mentioned reagent, at 0·1% in a 3% acetic sol. for 30 min. or at 10% in sulphuric sol. for 10 min., to a number of fungi at the Clinique Dermatologique, Strasbourg, are reported and discussed. The wall and part of the endospores of [*Coccidioides immitis*] reacted positively, as also did the cytoplasm of *Candida albicans*; the capsules of *Blastomyces* [*Paracoccidioides*] *brasiliensis* and *B. dermatitidis* (the external capsule of the latter being bright blue and the internal blue-green); [*Sporotrichum schenckii*]; the causal organisms of aspergillosis [*Aspergillus* spp.] (cytoplasm only); *Streptomyces madurae*; the agents of chromoblastomycosis; *Actinomyces bovis*; the giant form of histoplasmosis [*Histoplasma duboisii*] (cytoplasm only); and the capsule and cytoplasm of the causal organism of torulosis [*Cryptococcus neoformans*] (weakly).

13. Gill (E. K.). **Mycotic infections in otolaryngology.**—*Arch. Otolaryng., Chicago*, **72**, 3, pp. 321–324, 1960.

Iodine or the iodides apparently possess the greatest degree of effectiveness in the treatment of external otitis caused by fungi. This work at Corpus Christi, Texas suggests that solutions containing neomycin, polymycin, or acetic acid in a propylene glycol or sodium propionate vehicle also seem to offer possibilities.

14. Labie (C.). **Nuevos aspectos de las lesiones micósicas en los animales.** [New aspects of mycotic lesions in animals.]—*Rev. Investig. Ganaderas, 1960*, 8, pp. 79–98, 1960. [3 pp. ref.]

A Spanish translation of **3**, No. 1107.

15. McDonough (E. S.), Georg (Lucille K.), Ajello (L.), & Brinkman (Sherry). **Growth of dimorphic human pathogenic fungi on media containing cycloheximide and chloramphenicol.**—*Mycopathologia*, **13**, 2, pp. 113–120, 2 fig., 1960. [10 ref.]

In studies at the Communicable Disease Center, Atlanta, Ga, the yeast phases of *Blastomyces dermatitidis*, *Histoplasma capsulatum*, *Paracoccidioides brasiliensis*, and *Sporotrichum schenckii* were more sensitive than the mycelial to cycloheximide [actidione] and chloramphenicol. An actidione-resistant str. of *B. dermatitidis* was developed from a sensitive str. Experimental results support the use of 0·5 mg./ml.

actidione and 0·05 mg./ml. chloramphenicol in media for the isolation of these 4 fungi at 25° C. Not more than 0·2 mg./ml. chloramphenicol should be used to preserve sputum later to be cultured for these 4 fungi.

16. Lampen (J. O.) Arnow (P. M.), & Safferman (R. S.). **Mechanism of protection by sterols against polyene antibiotics.**—*J. Bact.*, **80**, 2, pp. 200–206, 4 graphs, 1960.

At the Inst. Microbiol., Rutgers Univ., New Brunswick, N.J., the antifungal activity of filipin, nystatin, and antimycoin was prevented by the addition of sterols.

17. Landi (S.) & Fitzgerald (J. D. L.). **Sensitization and anaphylactic shock induced in Guinea-pigs by using fungus extracts.**—*Mycopathologia*, **12**, 4, pp. 257–264, 1960.

At the Dept Allergy, Western Hosp., Toronto, guinea-pigs were sensitized by subcutaneous injection of extracts of *Aspergillus niger*, *A. fumigatus*, *A. flavus*, *A. rugulosus*, *A. nidulans*, *A. niveus*, *A. quadricinctus*, *A. amstelodami*, *A. ustus*, and *A. clavatus*. A shock dose (1 mg. total N, as was the sensitizing dose), was given intracardially after 35–42 days. Anaphylactic reactions occurred wherever the same extract was used for both sensitization and shock doses, and sometimes where these doses were from different spp. There was no clearly defined pattern in these cross-reactions.

18. Seeliger (H. P. R.). **Advances in the serology of fungi.**—*Trans. Brit. mycol. Soc.*, **43**, 3, pp. 543–555, 1 pl., 1960. [39 ref.]

Following a brief review of serological methods applicable to fungi, serological studies with yeasts are described to illustrate the application of these methods to elucidate taxonomic relationships in fungi [cf. **3**, No. 310].

19. Wearne (W. M.). **Actinomycosis of the finger.**—*Proc. roy. Soc. Med.*, **53**, 10, p. 884, 3 fig., 1960.

A report from the Charing Cross Hosp., London, of infection of the right index finger by *Actinomyces israelii* in a 46-yr.-old man following laceration on an adversary's tooth during a fight [I, No. 454]. Cure was effected by a 17-week course of penicillin therapy.

20. Rains (A. J. H.), Barson (G. J.), Crawford (N.), & Shrewsbury (J. F. D.). **A chemical and bacteriological study of gallstones. The presence of an actinomycete.**—*Lancet, 1960*, **2**, 7151, pp. 614–618, 2 fig., 1960. [19 ref.]

At Univ. Birmingham investigation of the central portion of gallstones from 57 patients, involving bacteriological methods of direct smear, culture, and serology, revealed the presence of an actinomycete (30 isolates) distinct from *Actinomyces bovis*.

21. Lopez-Garcia (E.), Ales-Reinlein (J. M.), Ramirez-Guedes (J.), & Ortiz-Masllorens (F.). **Nocardiosis.**—*Rev. clín. esp.*, **77**, 1, pp. 20–24, 1960. [Engl., Fr., Germ. summ.]

From the Inst. de Investigaciones Clínicas y Médicas, Madrid, a fatal case of pulmonary nocardiosis is recorded.

22. Orsini (O.), Furtado (T. A.), & Machado (E. L.). **Nocardiose tratada pelo sulfisoxazole.** [Nocardiosis treated with sulphisoxazole.]—*Brasil méd.*, **73**, pp. 45–52, 1959.

Report of a case in Rio de Janeiro due to *Nocardia brasiliensis*. The skin and soft tissues of the upper part of the back and neck were invaded. Cure was effected by a

daily dose of 18 g. of the drug administered orally for 30 days followed by 12 g. for 54 days. No relapse had occurred 3 months later. Previous administration of a sulphone, penicillin, and streptomycin was ineffective.

23. Fagard (P.), Thienpont (D.), Vandervelden (M.), & Vandesteene (R.). **Hépatite à Nocardia asteroides chez le Cheval.** [Hepatitis due to *N. asteroides* in the Horse.]—*Bull. Soc. Path. exot.*, **53**, 2, pp. 241–250, 1 pl., 1960.

The fungus was isolated from multiple abscesses in the liver of a 9-yr.-old horse (apparently a new host).

24. Awad (F. I.). **Nocardiosis of the bovine udder and testis.**—*Vet. Rec.*, **72**, 18, pp. 341–342, 1960. [*V.B.*, **30**, No. 2841.]

Nocardia farcinica infection of cattle is fairly common in the Sudan, giving rise to 2 types of disease, viz. a superficial type with a chronic purulo-granulomatous inflammation of the subcutis, involving the lymph nodes and vessels; and an internal type, the pulmonary form of which closely resembles tuberculosis [**3**, Nos. 811, 1113].

The present paper from the Res. Div., Min. anim. Resources, Khartoum, covers a number of infections of the udder and testis, seen in the field or on examination of abattoir-material. The acid-fast organism was demonstrable in smear preparations in every case. Histopathological study of udder lesions showed the presence of extensive infiltration of new connective tissue cells, endotheloid cells, and a few giant cells. In some cases this infiltration entirely replaced the glandular structure. These lesions are closely similar to those of tuberculosis. Nodules in the testis are initially similar to those in other organs, but later the grandular structure is destroyed, and the entire testis transformed into an abscess with the tunica vaginalis as its capsule. Economic losses due to this disease are important.

25. Austwick (P. K. C.). **Mycotic dermatitis and downgrading of wool.**—*National Sheep Breeders' Ass. Yearbook 1960*, pp. 39–42, 4 fig., 1960.

Mycotic dermatitis or 'lumpy wool' (*Dermatophilus dermatonomus*) [cf. **3**, No. 817] is one of the commonest diseases of sheep in Great Britain. The presence of scabs does not always lead to downgrading, but the disease may contribute to yellowing or 'canary stain', which is a frequent reason for downgrading. One fault increasingly observed in wool is the presence of grey fibres, often due to hereditary factors, though it may often follow severe mycotic dermatitis. The disease may also affect the quality of the skins, which may have bad graining, due to the opening of wool follicles by inflammation, and dark pigmented patches.

26. Neves (H.). **Mycological study of 519 cases of ringworm infections in Portugal. Significance of multiple localizations. Tinea as a single infection.**—*Mycopathologia*, **13**, 2, pp. 121–132, 1 graph, 1960. [14 ref.]

At Fac. Sci., and Hosp. Curry Cabral, Lisbon, the author studied 572 cases of dermatomycosis (tinea of the scalp, glabrous skin, nails, beard, groin, feet) during 1959. The causal agent was identified in 519 cases and included *Trichophyton violaceum* (27·9%), *Microsporum canis* (21·4), *T. tonsurans* (14·0), *T. mentagrophytes* (11·7), *T. megninii* (8·3), *E[pidermophyton] floccosum* (6·3,) *T. rubrum* (6), *T. schoenleinii* (3·5), *T. verrucosum* (0·2), *Candida albicans* (0·4), and *Scopulariopsis* sp. (0·2). This is the 1st record of *T. verrucosum* in Portugal. *T. megninii* appeared to be of more frequent occurrence than in other countries.

27. Grin (E. I.), Ožegović (L.), & Šenfeld (M.). **T. ferrugineum u NR Makedoniji.** [*Microsporum ferrugineum* in the Macedonian People's Republic.]—

Rad. nauč. Druš. Sarajevo, **15**, Dept med. Sci., 7, pp. 11–16, 3 pl., 1 map, 1960. [Engl. summ. 23 ref.]

Of 401 cases of dermatophytosis 238 (59·4%) were caused by *T[richophyton] violaceum*, 121 (30·2%) by *M. ferrugineum*, 34 (8·5) by *T. schoenleinii*, 5 (1·3) by *T. tonsurans*, 2 (0·4) by *M. audouinii*, and 1 (0·2) by *T. verrucosum*. Like *M. audouinii* in N. Serbia and Vojvodina, *M. ferrugineum* is endemic in Macedonia, without a tendency to spread.

28. Haufe (F.). **Die Frequenz der Dermatomykosen in Ost-Mecklenburg, unter besonderer Berücksichtigung der Flora der Epidermophytien in der Jahren 1958/59.** [The frequency of dermatomycosis in E. Mecklenburg, with special reference to the flora of the epidermophytoses in the years 1958–9.]—*Z. Haut- u. Geschlechtskrankh.*, **28**, 10, pp. 336–341, 1960.

The local frequency of dermatomycoses was already on the increase in the years following the 2nd World War, and their incidence is now 6·8% of all skin diseases with epidermophytosis predominating (82·4%). The principal agent in 1958–9 was *Trichophyton mentagrophytes* (63·9% of all positive cultures), followed by *T. rubrum* (36·1). The latter was responsible for 71·1% of the onychomycoses (which have become more widespread in the province, especially since 1952) reported during the year and the former for the remainder.

29. Jung (H.-D.). **Die gesetzliche mykologische Dokumentation und ihre sozialhygienische Bedeutung am Beispiel des Bezirkes Neubrandenburg.** [Legal mycological documentation and its social-hygienic significance as illustrated by Neubrandenburg district.]—*Arch. klin. exp. Derm.*, **211**, pp. 64–69, 1960.

An Order of 18 May 1955 enforces the formal notification to the sanitary authorities of all cases of favus, microsporosis, and trichophytosis in the German Democratic Republic. In 1956 the total number of cases of trichophytosis notified in Neubrandenburg was 35, rising to 184 (with more scrupulous attention of dermatologists to their obligations in this respect) in 1957, when there were also 4 cases of microsporosis.

30. Lostia (A.) & Ruju (C.). **Studio epidemiologico sulle microsporie in Sardegna.** [A study of the epidemiology of *Microsporum* infections in Sardinia.]—*Rass. med. Sarda*, **62**, 1, pp. 69–73, 1 graph, 1960. [Engl. summ. 4 ref.]

Since 1955 the incidence of tineas in the province of Cagliari has remained approximately constant (104–134/yr.) but in 1958 and again in 1959 the proportion caused by *M. canis* was more than 10 times as great as for 1955–57. This effect is attributed to large-scale immigration.

31. Kornbleet (L. V.) with the assistance of J. Villafane. **The changing pattern of superficial fungous infection in New York City.**—*Dermatologica, Basel*, **120**, 3, pp. 185–190, 3 graphs, 1960. [Germ., Fr. summ.]

From this review of the fungi isolated from the scalp, glabrous skin, and nails at Bellevue Hosp. during 1955–58, it appears that *Microsporum audouinii* is endemic in the area, having been determined in 72·4% of all cases. The increasing incidence of infection by *Trichophyton tonsurans*, which occurred in 49 patients (2% of the total), is attributed to the changing population of the city, 44 being of Puerto Rican extraction. *T. rubrum* is replacing *T. mentagrophytes* as the cause of onychomycoses and superficial infections of the feet.

32. Crissey (J. T.) & Martin (R.). **A new form of scalp ringworm in western New York.**—*N.Y. St. J. Med.*, **60**, 5, pp. 679–682, 1960.

A report from the Edward J. Meyer Memorial Hosp., Buffalo, on 26 cases of infec-

tion by *Trichophyton tonsurans* (including 1 from St. Catherines, Ont.), supplemented by information on the symptoms, mycology, epidemiology, and treatment.

33. Mata (Grace G.) & Mata (L.). **Dermatofitosis en Costa Rica. I. Observaciones sobre 76 casos.** [Infections by dermatophytes in Costa Rica. Observations on 76 cases.] —*Rev. Biol. trop., S. José*, **7**, 2, pp. 157–190, 8 pl., 47 fig., 1959. [Engl. summ. 35 ref.]

Cultures were obtained from 64 of the 76 cases. Of 28 cases of tinea capitis 18 were due to *Microsporum canis*, 5 to *M. gypseum*, and 1 each to *Trichophyton verrucosum*, *T. rubrum*, and *T. tonsurans*. Tinea cruris and tinea pedis were frequent and *T. rubrum* was the prevalent species. Of 31 cases of tinea corporis 10 were due to *T. rubrum* and 6 to *M. gypseum*. Tinea imbricata and favus were not observed.

34. Jiménez-Quirós (O.). **Epidermofitosis de los pies, pié de atleta, en estudiantes preuniversitarios.** [Epidermophytosis of the feet, athlete's foot, in new undergraduates.]—*Rev. Biol. trop., S. José*, **7**, 2, pp. 199–202, 1959. [Engl. summ. 10 ref.]

At Univ. Costa Rica the incidence in new students was 83% in 1,116 males and 56% in 896 females.

35. Pratt (Reta) & Carmichael (J. W.). **Mold flora of human scalp hair.**—*Mycopathologia*, **13**, 2, pp. 133–134, 1960.

At Univ. Alberta, 97 samples of hair collected from shoulder towels in barber shops were examined. *Penicillium* spp. grew from 35 samples, *Cladosporium herbarum* from 18, Sphaeropsidales from 14, *Paecilomyces elegans* from 11 (all from the same barber's shop), *Aspergillus* spp. from 10, *Alternaria* sp. from 7, *Cephalosporium* sp. from 6, and *Chrysosporium pannorum*, *Pullularia pullulans*, *Stemphylium* spp., and *Scopulariopsis brevicaulis* from 4. Other common moulds were isolated occasionally. There was no growth from 18 of the samples. No dermatophytes were isolated, and none of the fungi isolated penetrated or digested the hairs.

36. *a.* English (Mary P.) & Gibson (Mary D.). **Studies in the epidemiology of tinea pedis. III. Cross-infection in the family.**—*Brit. med. J.*, **1**, 5189, pp. 1860–1862, 1960. [*B.H.*, **35**, p. 980.]

Further work [cf. **3**, No. 1138] on tinea pedis due to *Trichophyton mentagrophytes* (*interdigitale* type) in families of 22 day-school children and 19 skin clinic patients is reported on from Bristol Royal Hosp. In each of 3 school children's families 1 contact had been infected (4%), in those of 8 clinic patients', 12 (23%). Cross-infection rises with the number of baths taken weekly and with the patient's social class. It is suggested that the low cross-infection rate among school children's families may be partly due to the high cure rate in these and that easily resolved and persistent types of infection may be of different epidemiological importance.

Three infections with *Epidermophyton floccosum* concurrent with *T. mentagrophytes* were found, in 1 of these no cross-infection had occurred. The findings on cross-infection are not in agreement with Sulzberger & Baer (1955, *Yearbook of Dermatology & Syphilology, Chicago*, 1954–5, p. 10).

b. English (Mary P.), Gibson (Mary D.), & Duncan (Ethel H. L.). **Id. IV. Seed and soil.**—*Ibid.*, **2**, 5198, pp. 575–576, 1960. [20 ref.]

Two comparisons were made of 11–15-yr.-old children: (1) infected and uninfected, (2) boys and girls. In the 1st group it was shown that the footwear of infected and uninfected boys was almost identical but that infected boys started to attend swimming baths at an earlier age and used them more frequently than uninfected ones. In the 2nd group there was no significant difference in the age at which bath-

ing was begun but boys bathe more frequently than girls. Girls footwear is cooler and lighter than boys, especially in the summer. Girls toes were significantly more crowded than boys.

No relationship could be shown between infection and the use of school showers (cf. **2**, No. 2301).

It is suggested that where badly ventilated footwear renders feet a suitable 'soil' for fungal growth the infection level in a community depends on the extent of exposure to infective particles. Well-ventilated footwear may be a limiting factor to infection.

36. *c.* English (Mary P.) & Gibson (Mary D.). **Id. V. Some day-schools revisited.** —*Ibid.*, **2**, 5198, pp. 577–579, 1960. [6 ref.]

This is a report of a survey of tinea pedis in 6 (5 boys' and 1 girls') local authority day-schools, all similarly surveyed 2 yr. earlier [**3**, No. 1138]. Little change in the incidence of lesions, infections, or fungus species was found. In one boys' school a significant drop in incidence was attributed to better cleaning of the baths used (35% of boys had never used them when badly cleaned) and to the fact that 'athletes foot' had become a social stigma. In a 2nd school using the same baths no significant drop in infection was found. In this case 17% of boys had not used the poorly cleaned baths and infection caused no social stigma.

Of 53 boys infected at the 1st survey, 45 were cured at the 2nd. Persistent infections may be epidemiologically important but are not a problem in individual boys. As in the 1st survey infections by *Trichophyton mentagrophytes* (*interdigitale* type) predominated (85·8% cases). *T. rubrum* (4·7% cases) and *Epidermophyton floccosum* (5·9% cases) were also found. All isolations of *E. floccosum* were from 1 school which had yielded 5 of 7 isolations at the 1st survey.

37. Kappel (U.). **Experimentelle Untersuchungen über die Desinfektionsmöglichkeiten von mit hautpathogen Pilzstämmen infizierter Strumpfbekleidung aus Chemiefaserstoffen.** [Experimental investigations on the possibility of disinfecting synthetic hosiery contaminated by dermatophytes.]—*Mykosen*, **3**, 3, pp. 83–93, 1960.

At the Dermatologische Abteilung, Städt. Krankenhaus, Berlin-Britz, the preparation Bayer 4169 was found highly effective for the disinfection of hosiery (incorporating perlon) experimentally contaminated with *Candida albicans*, *Trichophyton mentagrophytes*, and *T. rubrum*. Soaking for 10 hr. in a 0·1% sol. is recommended for disinfection of stockings worn by persons with foot mycoses.

38. Marples (Mary J.). **Recent isolations of Microsporum distortum in New Zealand.**—*J. invest. Derm.*, **34**, 6, pp. 435–438, 1 fig., 1960.

From the Dept Microbiol., Univ. Otago, are reported 6 case histories of *M. distortum* [**2**, No. 1678] infections seen since 1954. From the age and sex distribution of the 18 cases recorded for Otago since 1947 it would appear that very young children are most commonly infected: 81% of lesions were in under 7-yr. olds, and 37·5% in under 3-yr. olds. Infections were equally distributed between the sexes.

It is thought that the soil is the most likely reservoir of infection, although attempts to isolate *M. distortum* from the gardens of 2 patients by hair-baiting several soil samples were unsuccessful possibly because *Keratinomyces ajelloi* was recovered from all plates.

39. Кавак (К. S.). Изменения периферической нервной системы кожи при микроспории. [Changes of the peripheral nervous system of the skin in microsporosis.]—Вестн. Дерматол. Венерол. [*Vestn. Dermatol. Venerol.*], **33**, 3, pp. 34–40, 4 fig., 1959. [Engl. summ.]

At Dept Histology and Embryology, Kiev med. Inst., 28 guinea-pigs were inocu-

lated by a single application to the shaved surface of the skin of a washing from a 2-week culture on Sabouraud medium of *Microsporum lanosum* [*M. canis*] to study the effect on the peripheral nervous system. Hyperimpregnation, local and general swelling, and vacuolization were noted in the peripheral nervous system 3 days after inoculation, and within 5 days irritation and destruction of the axial cylinders occurred in a still greater number of flesh nerve fibres. In some thick flesh nerve fibres dilation of the Schmidt-Lantermann incisures and unevenness of the contours of the myelin case were noted. There is almost a complete re-establishment of the coat 60 days after inoculation, but in the peripheral nervous system there were still considerable reactive changes, though there is a clear regeneration of nerve fibres. Newly formed axons start from the axial cylinders, forming part of the nerve stems situated in the deep layers of the derma and close to the hair follicles. The terminal nerve apparatus has a higher resistance to *M. canis*.

40. Mackenzie (D. W. R.), Burrows (D.), & Walby (A. L.). **Trichophyton sulphureum in a residential school.** –*Brit. med. J.*, **2**, 5205, pp. 1055–1058, 1960.

A report from Dept Microbiol., Queen's Univ., Belfast, on an outbreak of *T. sulfureum* infection affecting 21 girls in a Belfast residential school. Outbreaks had occurred in the school in 1952 and 1955 when 1 and 5 infections with *T. sulfureum* were found, respectively. In the 3rd outbreak in 1959 eradication was attempted by therapeutic and prophylactic use of griseofulvin and sterilization of all sites known to harbour the fungus. Of lesions on the scalp, body, and feet those on glabrous skin responded to treatment more quickly than on other sites and no new lesions were observed after treatment started. Examination of the children after 6 months showed 1 child to be still infected and the fungus was isolated from a few non-living sites. Failure to eliminate infection is attributed to the difficulty of clinical detection. A 'minimal symptom' condition is thought to persist for years when the individual acts as a carrier.

41. Balabanoff (A.). **Berufliche Trichophytie der Handteller und Nägel durch Trichophyton rubrum.** [Occupational trichophytosis of the palms and nails caused by *T. rubrum*.]—*Berufsdermatosen*, **8**, 4, pp. 201–214, 11 fig. (6 col.), 1960. [Engl., Fr. summ. 19 ref.]

Of 159 patients treated at the Dermat. Clinic, Sofia, Bulgaria, during 1948–59, 38 (24%) suffered from hyperkeratotic-squamous palmar infection due to heavy stress of occupational origin: in 20 the right hand was involved, in 9 the left, and in the remainder both. Three cases of particular interest are described in detail. Infection generally spreads upwards from the feet, sometimes by way of the genital region. Primary pure cultures of the fungus on Sabouraud's medium tended to be more frequently positive from the hands than from the soles, the white var. predominating. The clinical findings, morphology, variability, and epidemiology of the pathogen are considered to support the concept of a relationship between the spp. *T. rosaceum* [*T. megninii*] and *T. verrucosum* on the one hand, and *T. rubrum* and *T. violaceum* on the other.

42. Rieth (H.), Schirren (C.), El-Fiki (A. Y.), & Ito (K.). **III. Direkte und indirekte Übertragung von Mäuse-Trichophytie auf Menschen.** [Direct and indirect transmission of Mouse trichophytosis to Man.]—*Bull. pharm. Res. Inst., Osaka*, **25**, pp. 15–18, 6 fig., 1960.

A report from Universitäts-Hautklinik, Hamburg-Eppendorf, of 2 cases of accidental *Trichophyton mentagrophytes* infection of laboratory workers contracted from infected mice and cultural material, respectively.

43. Vanbreuseghem (R.). **La vie saprophytique des dermatophytes.** [The saprophytic life of dermatophytes.]—*Ann. Derm. Syph., Paris*, **87**, 5, pp. 481–492, 1960. [76 ref.]

A review and discussion, with some tentative explanations for the paucity of spp. (5) so far isolated from the main saprophytic habitat, i.e. the soil.

44. Evolceanu (R.), Alteras (I.), Dobrescu (A.), & Kursky-Eremia (V.). **Sur l'origine tellurique de Ctenomyces interdigitalis (Epidermophyton Kauffmann-Wolf). Dysidrose palmaire par contact avec de la terre.** [Soil origin of *Trichophyton interdigitale*. Dyshidrosis of the palm following contact with soil.]—*Mycopathologia*, **13**, 1, pp. 15–24, 6 fig., 1960. [Engl. summ.]

A report from Bucharest of the isolation of *T. interdigitale* [cf. **2**, No. 1967] from the superficial layers of the soil and of a case of dyshidrosis in a 34-yr.-old woman, who became infected when clearing earth and leaf debris from a pond. Experimental inoculations of a volunteer and guinea-pigs with the soil isolate were positive.

45. Evolceanu (R.) & Alteras (I.). **De l'origine saprophytique, tellurique des dermatophytes ; une espèce du genre Aleurisma, saprophyte du sol et agent d'une dermatomycose expérimentale.** [On the saprophytic origin, from the soil, of dermatophytes; an *Aleurisma* sp., a soil saprophyte causing experimental dermatomycosis.]—*Mycopathologia*, **12**, 3, pp. 223–232, 7 fig., 1960. [Engl. summ. 10 ref.]

At Sect. dermatologique de l'Institut de Thérapeutique, Bucarest, Romania, an *Aleurisma* sp. isolated from the upper soil produced lesions of the herpes circinatus type when inoculated on to the forearm of a 36-yr.-old woman, and the fungus was reisolated from the vesicles. Inoculations were unsuccessful on 7 other human volunteers, 8 white mice, and 4 guinea-pigs. There were certain antigenic similarities between this fungus and some common dermatophytes.

46. Friedman (Lorraine), Derbes (V. L.), Hodges (Elizabeth P.), & Sinski (J. T.). **The isolation of dermatophytes from the air.**—*J. invest. Derm.*, **35**, 1, pp. 3–5, 3 fig., 1960.

Microsporum audouinii and *Trichophyton tonsurans* were repeatedly trapped on agar plates exposed in a dermatology clinic at Tulane Univ. Sch. Med., New Orleans, La, suggesting that these fungi may contaminate media and be mistakenly considered as causative agents of disease. In a survey of 134 schoolchildren, 88 had positive cultures but by microscopic examination only 22 were found to be infected. *T. rubrum*, *T. mentagrophytes* and other dermatophytes were never found as contaminants.

47. Lindqvist (K.). **Ringorm hos husdyr i Norge.** [Ringworm in domestic animals in Norway.]—*Nord. Vet.-Med.*, **12**, 1, pp. 21–28, 1960. [Engl., Germ. summ. *V.B.*, **30**, No. 1744.]

A note from the Institutt for Nœringsmiddelkontroll og Hygiene, Norges veterinaerhøgskole, on the dermatophytes commonly affecting domestic animals in Norway. *Trichophyton verrucosum* was the most common agent of cattle ringworm. Endemic ringworm in horses was due to *T. equinum*, *Microsporum equinum*, or *T. mentagrophytes*, and endemic ringworm in dogs and cats to *M. canis*. Dermatophyte spp. from sporadic cases are mentioned, and probable reservoirs and habitats discussed. New records for Norway are *T. equinum*, *M. gypseum*, *M. equinum*, *M. canis*, *Keratinomyces ajelloi*, and *M. cookei*.

48. Miklaušić (B.) & Hajsig (M.). **Prilog poznavanju dermatomikoza kod domaćih životinja u NR Hrvatskoj. Trichophyton mentagrophytes kod Konja.** [Con-

tribution to the knowledge of dermatomycosis in domestic animals in the Croatian People's Republic. *T. mentagrophytes* in Horses.]—*Vet. Arh. (Zagreb)*, **30**, 3–4, pp. 104–106, 1 fig., 1960. [Engl., Germ. summ. 13 ref.]

A description and notes on clinical symptoms and on mycological diagnosis of ringworm due to *T. mentagrophytes* in 3 young horses. This record by Vet. Fac. Univ. Zagreb is a new host record for Yugoslavia.

49. Bisping (W.), El-Fiki (A. Y.), & Rieth (H.). **Infektionsversuche mit Dermatophyten beim Schwein.** [Experimental ringworm in the Pig.]—*Zbl. Vet-Med.*, **7**, 5, pp. 498–508, 2 fig., 1960. [Engl., Fr., Sp. summ. *V.B.*, **30**, No. 3192.]

At the Inst. für Mikrobiologie und Tierseuchen der tierärztlichen Hochschule, Hannover, round areas of approx. 7 cm. diam. on various parts of the body of several 2–3-month-old pigs were cleared of bristles, cleaned with alcohol, rubbed with emery paper until redness developed, and inoculated with *Trichophyton mentagrophytes, Microsporum gypseum, M. canis, T. verrucosum, T. tonsurans, T. quinckeanum, M. audouinii,* or *M. distortum.* Only the 1st 3 gave clinical symptoms. Infection did not always occur and established infections showed a marked tendency to heal spontaneously.

50. Quaglio (G. L.). **Arquivos de patologia aviaria. II. Tigna favosa nell'anitra,** [Archives of avian pathology. II. Favus in the Duck.]—*Rev. Cienc. vet. Lisboa*, **54**, 370, pp. 268–278, 8 fig., 1959. [Port., Fr., Engl., Germ. summ. *V.B.*, **30**, No. 2506.]

An account of duck favus (*Achorion* [*Trichophyton*] *gallinae*) in Italy. The disease is similar to that in fowls, and was experimentally transmitted to the latter at the Instituto di Patologia Generale, Univ. Bologna, Italy.

51. *a.* Azua-Dochao (L.). **Griseofulvina. Un antibiótica revolucionario en el tratamiento de las tiñas.** [Griseofulvin. A revolutionary treatment of tinea.] —*Arch. Fac. Med. Zaragoza*, **8**, 2, pp. 327–330, 1960.

b. Blank (H.) & Roth (F. J.). **Systemic control of cutaneous fungous infections.**—*Amer. J. med. Sci.*, **240**, 4, pp. 466–473, 8 fig., 2 graphs, 1960. [Interlingua summ.]

c. Hare (P. J.). **Griseofulvin.**—*Med. World*, **93**, 4, pp. 301–304, 3 fig., 1960.

d. Vanbreuseghem (R.). **La Griseofulvine : une révolution dans le traitement des teignes.** [Griseofulvin—a revolution in the treatment of tineas.]—*Brux. méd.*, **40**, 9, pp. 297–300, 1960.

Reviews.

52. Further reports of the successful use of griseofulvin [cf. **3**, No. 1755]:

a. Bensel (A.). **Treatment of tinea capitis in Children with griseofulvin.**—*Amer. J. Dis. Child.*, **100**, 1, pp. 131–132, 1960.

[N.J.; 11 cases (*Microsporum audouinii, M. canis*).]

b. Carvalho (A. I.). **Tiña fávica. Tratamiento con griseofulvina.** [Favus. Its treatment with griseofulvin.]—*Arch. argent. Derm.*, **10**, 1, pp. 64–66, 1960.

[Buenos Aires; 1 case (*Trichophyton schoenleinii*).]

c. Cremer (G.). **Ervaringen over de behandeling van mycosen met griseofulvine.** [Experiences in the treatment of mycoses with griseofulvin.]—*Ned. Tijdschr.*

Geneesk., **104** (i), 16, pp. 766–773, 6 fig., 1960. [Engl. summ. *B.H.*, **35**, p. 772.]

[Binnengasthuis, Amsterdam; 58 cases (*Trichophyton schoenleinii*, *T. tonsurans*, *T. rosaceum* [*T. megninii*], *T. rubrum*, *T. mentagrophytes*).]

52. *d.* KAISER (L.). **Perorale Behandlung der Mykosen mit Griseofulvin.** [Peroral treatment of mycoses with griseofulvin.]—*Dermatologica*, *Basel*, **121**, 1–3, pp. 52–62, 2 fig., 1960. [Engl., Fr. summ.]

[Poliklinik für Haut- und Geschlechtskrankheiten, Zürich; 45 cases (*Trichophyton interdigitale*, *T. rubrum*, *T. mentagrophytes*).]

e. SIMON (N.) & BALOGH (E.). **Die Anwendung des Griseofulvins bei Dermatomykosen.** [The use of griseofulvin against dermatomycoses.]—*Mykosen*, **3**, 1, pp. 1–8, 4 fig., 1960.

[Universitätsklinik f. Haut- u. Geschlechtskr., Debrecen, Hungary; 1 case (generalized mixed infection; *Trichophyton mentagrophytes*, *Microsporum ferrugineum*, &c.).]

f. VANBREUSEGHEM (R.). **Traitement par la griséofulvine des onyxis dermatophytiques.** [Treatment with griseofulvin of dermatophyte infection of the nails.]—*Brux.-méd.*, **40**, 23, pp. 813–820, 1960. [10 ref.]

[Antwerp; 7 cases (*Trichophyton rubrum*) 2 recovered (in 5½ and 8 months, respectively), the others markedly improved; pityriasis versicolor [*Malassezia furfur*], which complicated 1 case, did not respond.]

53. BERRY (C. Z.), SHAPIRO (S. I.), & DAHLEN (R. F.). **Recurrence of Trichophyton rubrum infection during treatment with griseofulvin.**—*Arch. Derm., Chicago*, **81**, 6, p. 982, 1960.

From Tucson, Arizona, is reported the case of a 34-yr.-old white woman with chronic *T. rubrum* infection of the feet and legs. Administration of the corticosteroid triamcinolone, started at 4 mg. 4 times daily, and maintained at 8–12 mg. daily, controlled most of the infections, which, however, reappeared when the dosage was reduced below 8 mg. On the appearance of a lesion on the cheek, triamcinoline was discontinued, and griseofulvin therapy (250 mg. 4 times daily) instituted. The response was excellent, but a new lesion appeared on the thigh, and persisted. The dosage was reduced to 250 mg. 4 times every 3rd day. On the appearance of another microscopically positive lesion on the right lower tibial area the original dosage level was restored, and was being continued at the time of writing.

It is not clear whether the new lesions represent entirely new infections by a resistant str. or strs., or a relapse of the original infection.

54. LEVAN (N. E.). **Untoward reaction to griseofulvin.**—*Arch. Derm., Chicago*, **82**, 4, p. 637, 1960.

Although some untoward side reactions to griseofulvin treatment, e.g. headaches and digestive upsets, have been reported, evidence that these complaints were actually due to the drug have not been forthcoming.

In the case here described from Univ. S. Calif. Sch. Med., Los Angeles, 'double blindfold' testing confirmed that symptoms of headache, confusion, irritability, anorexia, tightness in the chest, and fatigue in a 43-yr.-old white woman were caused by the antibiotic.

55. SMITH (NADINE G.). **Petechial reaction caused by griseofulvin.**—*Arch. Derm., Chicago*, **81**, 6, p. 981, 1960.

At the Dept Dermat., Univ. Minn. Sch. Med., a 42-yr.-old white woman with

moderately severe tinea pedis, receiving 1 g. griseofulvin *per os* daily, developed a generalized petechial eruption on the 6th day of treatment, which reached a peak on the 9th day. She also experienced intense pruritis and erythema of the palms and soles, developing 30 min. after taking the antibiotic, and subsiding after several hr. On the 14th day, when she returned for examination, several hundred pale-red petechiae were observed, scattered over the lower extremities. These began to fade almost at once on cessation of treatment. The tinea was apparently cured.

56. Quero (R.). **Allergic reaction to griseofulvin.**—*J. invest. Derm.*, **34**, 5, pp. 283–284, 1960.

A 55-yr.-old physician, allergic to penicillin, developed an urticarial and vascular allergic eruption at the outset of griseofulvin treatment (4 tablets daily) for stubborn dermatophytosis of the feet. Patch tests and intradermal tests were done with both antibiotics. There is no evidence of a common antigenicity, or of cross-sensitivity, in these antibiotics, and the case is attributed to a chance association of different and distinct hypersensitivities.

57. Schwarz (J.) & Loutzenhizer (J. K.). **Laboratory experiences with griseofulvin.**—*J. invest. Derm.*, **34**, 5, pp. 295–299, 6 fig., 1 graph, 1960.

At the Mycol. Lab., Cincinnati General Hosp., Ohio, spermatogenesis was affected in mice given griseofulvin at a level 60 times higher than the recommended therapeutic dose for men.

58. Scott (A.). **Behaviour of radioactive griseofulvin in skin.**—*Nature, Lond.*, **187**, 4738, pp. 705–706, 1 fig., 1960.

Experiments at St. Bartholomew's Hosp., London, confirming the findings of Gentles *et al.* on the griseofulvin moiety extractable by water [**3**, No. 840], failed to demonstrate radioactivity in any quiescent areas of skin, which suggests the inability of griseofulvin to affect the fungus in necrotic tissue. On human skin the conc. of griseofulvin in infected sites, in particular around parts with fungal accumulation, seems to indicate that the partially degenerated keratin aids griseofulvin to penetrate into its interstices and arrest the progress of fungal growth.

59. Manktelow (B. W.). **The in vitro activity of griseofulvin on some dermatophytes of veterinary interest.**—*N.Z. vet. J.*, **8**, 2, pp. 23–27, 6 fig., 1960. [*V.B.*, **30**, No. 3191.]

A note from the Wallaceville Animal Res. Sta., Dept Agric., Wellington, stating that the min. inhibitory griseofulvin conc. *in vitro* for *Keratinomyces ajelloi* was at least 4 times that for *Microsporum canis*, *M. distortum*, *M. gypseum*, *Trichophyton mentagrophytes*, and *T. verrucosum*. The fungistatic effect was found to be reversible. Thus, *T. verrucosum* growing in liquid medium was exposed, for 6 days, to 5·0 μg./ml., which caused gross distortion of the colonies: however, when this material was plated out on blood agar it gave rise to normal colonies after 11 days at 27° C.

60. Albett (R. E.) & Gill (E. A.). **Griseofulvin in the treatment of Microsporum canis infection in Dogs.**—*Vet. Rec.*, **72**, p. 74, 1960. [*V.B.*, **30**, No. 1745.]

At Glaxo Labs., Greenford, Middx., *M. canis* infection of 4 Boxer puppies of the same litter, producing extensive lesions positive to Wood's light, was eliminated by daily oral dosage with 25 mg. griseofulvin/kg. body wt. for 2 or 4 weeks.

61. Dostrovsky (A.), Raubitschek (F.), Even-Paz (Z.), & Axelrad (B.). **The treatment of tinea capitis with oral potassium iodide.**—*J. invest. Derm*, **34**, 5, pp. 347–349, 1960.

At the Dept Derm., Hadassah Univ., Jerusalem, Israel, oral KI (cf. S. Tultchinsky-

Goldstein—*Harefuah*, **55**, pp. 291–292, 1958), cured 40 of 68 cases of 'blackdot' ringworm (*T*[*richophyton*] *violaceum*) and 2 of 9 cases of favus (*T. schoenleinii*). Factors which may determine the success or failure of the treatment are discussed.

62. Lindsay (D. G.), Becker (S. W.), & Walton (J. W.). **Treatment of cutaneous Trichophyton rubrum infection with human immune globulin.**—*Arch. Derm., Chicago*, **81**, 4, pp. 586–590, 1960.

At the Dermat. Sect., Veterans Administration Hosp., Long Beach, Calif., 5 patients with *T. rubrum* infection of the palms and nails; palms, soles, and plaque; 1 foot and plaque; plaques; and disseminated infection, respectively, were not cured by injection of human γ-globulin [cf. **3**, No. 225], though temporary apparent regression occurred in some plaques.

63. Jakac (D.) & Knigge (H.). **Beitrag zur Behandlung von Interdigitalmykosen.** [A contribution to the treatment of interdigital mycoses.]—*Mykosen*, **3**, 1, pp. 12–15, 1960.

At the Hautklinik der Städt. Krankenanstalten, Dortmund, antimycin (a preparation from culture fluid of *Penicillium notatum* [cf. Halbeisen. *Z. Haut- u. Geschlechtskrankheiten*, **26**, 3, 1959]) was used against 28 cases of interdigital mycosis of the right foot (*Trichophyton rubrum*, 13; *T. interdigitale*, 8; *Candida albicans*, 4; and unidentified, 3). The fungi could not be isolated after 10 days, although sometimes microscopically demonstrable after 15 days. Infections of the left feet, treated with [unspecified] antimycotics which are normally used for such infections, served as controls. The results with antimycin are considered highly satisfactory.

64. Herpay (Z.). **Klinisch-therapeutische Untersuchungen mit 'flavofungin', einem neuen Antibiotikum mit fungizider Wirkung.** [Clinico-therapeutic studies on 'flavofungin', a new antibiotic with fungicidal action.]—*Derm. Wschr.*, **142**, 34, pp. 933–936, 1960.

A report from the Med. Univ., Debrecen, Hungary, on the beneficial effects of flavofungin in the treatment especially of superficial dermatomycoses.

65. Levy-Lebhar (G.) & Levy-Lebhar (J. P.). **Roentgen-épilation du cuir chevelu dans le traitement des teignes. Conclusions après 18,000 irradiations dans une collectivité d'enfants marocains.** [Depilation of the scalp by X-rays in the treatment of tineas. Conclusions from 18,000 treatments in a group of Moroccan Children.]—*Maroc méd.*, **39**, 416, pp. 82–84, 1960. [*B.H.*, **35**, p. 981.]

X-ray treatment of tinea capitis is not dangerous if applied not more than twice and preferably only once; if the apparatus is efficient and is in the hands of a qualified operator; and if incidence in the different parts is constantly modified as a function of the shape of the head. The treatment of large numbers of children together, however, entails great difficulties of organization, and much hope is placed on the use of griseofulvin.

66. Tromovitch (T. A.), Sinski (J. T.), & Derbes (V. J.), with the technical assistance of Hodges (Elizabeth P.). **Failure of chemical epilation in the treatment of tinea capitis.**—*Arch. Derm., Chicago*, **81**, 6, pp. 970–971, 1960.

When Benedek's method of selective chemical epilation [**3**, No. 489] was tried, at the Tulane Univ. Sch. Med., New Orleans, on 50 cases of tinea capitis (*Microsporum audouinii* 39, *Trichophyton tonsurans* 11) in children aged 1–11 yr., there were 36 failures. Equal or higher percentage cures were obtained by oral or topical placebo therapy. It is concluded that Benedek's method is without value, and is, moreover, associated with a significant percentage (12%) of side-actions, viz. allergic contact type eczematous dermatitis with generalized eruption, or primary irritant contact dermatitis.

67. Baichwal (R. S.), Baxter (R. M.), Kandel (S. I.), & Walker (G. C.). **Antifungal action of salicylanilide. II.**—*Canad. J. Biochem. Physiol.*, **38**, 3, pp. 245–251, 1960.

The fungistatic activity against *Trichophyton mentagrophytes* of various compounds structurally related to salicylanilide suggests that the OH and CONH groupings are an important factor in their efficiency. The enhanced activity exerted by the chloro derivatives of salicylanilides and the p*K*a values determined for them point to the involvement of H bonding between the anilide H atom of the molecules with an electron donor atom of a polypeptide or an enzyme vitally concerned with the normal metabolism of the fungus. The inhibition of enzymes was followed through the development of specific colour reactions on salicylanilide assay plates, and the results of the observations indicated the participation of SH groups in the mechanism of operation.

68. Pan (F.) & Wiese (G. A.). **The synthesis and antifungal studies of some benzofuran compounds.**—*J. Amer. pharm. Ass.*, Sci. Ed., **49**, 5, pp. 259–264, 1960.

An improved synthesis of benzofuran-2-carboxaldehyde and 2-methylbenzofuran-3-carboxaldehyde and the preparation of 23 new derivatives are reported from the Coll. Pharm., Univ. Iowa, Iowa City. Among those tested (in comparison with undecylenic acid) for toxicity to *Microsporum audouinii*, *M. gypseum*, and *Trichophyton rubrum* on Sabouraud's dextrose agar+0·1% tween 80, using an agar-plate, paper-disk technique, benzofuran-2-carboxaldehyde exhibited the max. activity in every case.

69. Waters (J. A.) & Wiese (G. A.). **The synthesis and antifungal evaluation of certain acetylenic compounds.**—*J. Amer. pharm. Ass., Sci. Ed.*, **49**, 2, pp. 112–114, 1960.

Of a number of 4-diethylamino-2-butynyl esters and 1,4-bis-N-substituted amino-2-butynes tested *in vitro* against *Trichophyton rubrum*, *Microsporum gypseum*, and *M. audouinii*, using undecylenic acid as a control [see above], the most effective was 4-diethylamino-2-butynyl-*o*-toluate HCl.

70. McPherson (E. A.). **The assessment of antimycotic agents for Cattle ringworm, Trichophyton verrucosum.**—*Vet. Rec.*, **71**, pp. 539–543, 2 fig., 3 graphs, 1960. [*V.B.*, **30**, No. 996.]

At the Royal (Dick) Sch. Vet. Studies, Univ. Edinburgh, guinea-pigs were found unsuitable for screening topical antimycotic preparations, as spontaneous healing occurred simultaneously in both experimental animals and controls. Calves were suitable, and up to 36 lesions could be established on a single animal by intradermal inoculation of spore suspensions. None of 9 surface dressings tested had any effect on the duration of these lesions. An infected heifer was introduced for 24 hr. into a field with 72 Ayrshire calves; 22 animals became infected and were treated with various fungicides. No conclusion could be reached as to their efficacy; at their best they only curtailed the extension of recent lesions and limited the dissemination of infective material.

71. Segawa (C.). **Study of fungi. II. Effect of the vitamins K_3 and B_2 on their growth.**—*J. Iwate med. Ass.*, **10**, 2, pp. 163–172, 1958. [In Jap., Russ. summ. Abs. in *Referat. Zh. Biol., 1960*, 12, p. 119, 1960.]

Vitamin K_3 inhibited the growth of the fungi in the following order: *Trichophyton rubrum*, *T. interdigitale*, *T. asteroides* [*T. mentagrophytes*], *Candida albicans*; vitamins B_2 accelerated growth of these fungi in the reverse order.

72. Biggio (P.). **Influenze esercitate in vitro dall'idrossiprolina sullo sviluppo di alcuni dermatofiti.** [The effect *in vitro* of hydroxyproline on the growth of some dermatophytes.]—*Rass. med. sarda*, **62**, (N.S. **11**), 3, pp. 343–350, 1 fig., 1960. [Engl. summ. 10 ref.]

At Univ. Cagliari, Sardinia, hydroxyproline, in a basal medium containing glucose, mineral salts, and asparagine, constantly inhibited the growth of all strains of *Trichophyton schoenleinii*, *Epidermophyton floccosum*, *T.* [*Microsporum*] *ferrugineum*, and *M. gypseum* and occasionally that of *T. mentagrophytes*, *M. canis*, *T. gallinae*, *T. verrucosum*, *T. tonsurans*, *M. audouinii*, *T. megninii*, *T. crateriforme* [*T. tonsurans*], and *T. violaceum*.

The evidence indicates that hydroxyproline is inhibitory only in a simple synthetic medium and probably blocks the synthesis of essential growth substances.

The data obtained underline the importance of hydroxyproline in relation to the metabolic requirements of the dermatophytes, especially as regards their keratinophilic properties.

73. Lostia (A.). **Sulle influenze esercitate dal lisozima sullo sviluppo in vitro di alcuni dermatomiceti.** [On the effects of lysozyme on the growth *in vitro* of some dermatophytes.]—*Rass. med. sarda*, **62** (N.S. **11**), 3, pp. 335–342, 1 fig., 1960. [Engl. summ. 4 ref.]

At Univ. Cagliari, Sardinia, the addition of lysozyme to solid and liquid media at 1 in 6,000 to 1 in 125 greatly impeded the growth of *Trichophyton schoenleinii*, *Epidermophyton floccosum*, *T. tonsurans*, *T. megninii*, and, to a lesser extent, that of *Microsporum audouinii*, *T. mentagrophytes*, *M. canis*, and *T. violaceum*.

74. Evolceanu (R.) & Lazar (Maria). **Le problème de l'existence et de la mise en évidence des ferments kératinolytiques chez les dermatophytes.** [The problem of the existence and the demonstration of keratinolytic enzymes in dermatophytes.]—*Mycopathologia*, **12**, 3, pp. 216–222, 1960. [Fr., Engl. summ. 11 ref.]

At the Sect. dermatologique de l'Institut de Thérapeutique, Bucarest, Romania, fine suspensions of acetone-washed keratin (i.e. hair, wool, cowhorn) were placed in tubes and separated into 2 parts with plugs of absorbent cotton wool. When the part of the suspension above the plug was inoculated with *Microsporum gypseum*, *M. lanosum* [*M. canis*], *Ctenomyces* [*Trichophyton*] *mentagrophytes*, or *C. interdigitalis* [*T. interdigitale*], the keratin was broken down not only above the plug, where direct contact with the fungi occurred, but also below the plug, where the fungi did not penetrate, thus demonstrating the production of a keratinolytic exoenzyme. The final products of the breakdown were amino acids. *T. violaceum* was only weakly keratinolytic.

75. Götz (H.). **Der Einfluss des Pilzwachstums auf die Wasserstoffionenkonzentration des Nährbodens.** [The influence of fungus growth on the hydrogen-ion concentration of the medium.]—*Arch. klin. exp. Derm.*, **211**, pp. 328–335, 1960.

Trichophyton mentagrophytes, *Microsporum gypseum*, and *Epidermophyton floccosum* altered the pH of Grütz III medium buffered with citrate-phosphate by reducing the acidity of the acid and neutral reactions and the alkalinity of the alkaline after 3 weeks' growth.

76. Sukhenko (F. T.). Протеолитические ферменты ржавого и пушистого микроспорумов. [The proteolytic enzymes of the rusty and downy *Microsporum* spp.]—Изв. Сибирск. Отдел. Акад. Наук СССР [*Izv. Sibirsk. Otdel. Akad. Nauk S.S.S.R.*], *1960*, 8, pp. 91–102, 1 graph, 1960. [21 ref.]

At the Dept Biochem., Novosibirsk med. Inst., it was established that *M. fer-*

rugineum has an enzyme consisting of proteinase and peptidase. Proteinase activity is much higher than peptidase activity. No significant quantity of proteolytic enzymes can be water extracted from fresh mycelium. The proteinase activity of *M. ferrugineum* occurs over a wide pH range (3·60–9·18) but is max. near neutral (pH 6·98–7·38).

77. Ito (Y.) & Fujii (T.). **Hydrolytic enzymes of the dermatophyte. Modifications in the physiology of the dermatophyte following pleomorphic degeneration.**—*R.C. Ist. lombardo*, **92B**, pp. 301–328, 1958. [Engl. *Chem. Abstr.*, **54**, 16, col. 16530c, 1960.]

At med. Sch., Gifu, Japan, the mycelium of *Trichophyton gypseum* [*T. mentagrophytes*] was found to contain a proteinase of the trypsin type with an opt. pH of 8·2, weak amylase and maltase (opt. pH 4·6–5), and traces of sucrose. The occurrence of a phosphomono-esterase and a pyrophosphatase, exerting max. activity at pH 8·8 and 7·8, respectively, was also demonstrated: both were activated by Mg^{++} and inactivated by CN– and ethylenediaminetetraacetic acid.

The pleomorphic form of the mycelium was found to be more active than the normal in the utilization of monosaccharides, N assimilation, and respiration, as well as more sensitive to the growth- and respiration-inhibiting effects of several synthetic fungicides. Remarkable differences between the 2 forms were also observed in respect of the water, protein, carbohydrate, and lipid contents.

78. Chattaway (F. W.), Thompson (C. C.), & Barlow (A. J. E.). **Carbohydrate metabolism in Microsporum canis.**—*J. gen. Microbiol.*, **22**, 3, pp. 649–656, 6 graphs, 1960.

In co-operative studies at the Dept Biochem., Sch. Med., Leeds, and the Dept Derm., Huddersfield Royal Infirmary, most of the enzymes of the Embden-Meyerhof and hexosemonophosphate pathways of carbohydrate metabolism, and those of the tricarboxylic acid cycle were detected in mycelial extracts of *M. canis*.

79. Prince (H. N.). **Quantitative estimation of chitin in Trichophyton mentagrophytes and the in vitro effect of chitinase.**—*J. invest. Derm.*, **35**, 1, pp. 1–2, 1960.

At the Res. Dept, Wallace & Tiernan Inc., Belleville, N.J., *T. mentagrophytes* was grown, harvested, and the cytoplasm was removed by extracting the lipids [cf. **3**, No. 1619] and refluxing the residue in 10% NaOH (3 700 ml. portions) for 31 hr. and washing with hot water until neutral. The cell wall fraction so obtained was hydrolyzed with 6N HCl, and the hydrolyzate dried and examined by chromatography: it was found to consist essentially of chitin and to represent 3·2% of the moist mycelium (14·4% by dry wt.). Similar amounts of chitin have been found in other fungi.

T. mentagrophytes overgrew a chitin agar plate culture of a streptomycete producing chitinase, indicating that this enzyme, extracellularly, did not affect the structure or viability of the dermatophyte.

80. Baichwal (M. R.) & Walker (G. C.). **A preliminary investigation of the pigments of Trichophyton rubrum.**—*Canad. J. Microbiol.*, **6**, 3, pp. 383–386, 2 graphs, 1960.

This paper from the Fac. Pharm., Univ. Toronto, comprises preliminary data obtained by chromatographic and absorption spectrum analysis of a pigment preparation from *T. rubrum* [cf. **3**, No. 203].

81. Balabanoff (V. A.). **Pigment-Antibiotikotropismus.** [Pigment antibiotikotropism.]—*Zbl. Bakt.* Abt. 1 (*Orig.*), **179**, 4, pp. 531–537, 9 fig. (7 col.), 1960. [Engl., Fr., Span., Russ. summ.]

At Fac. Med., Sofia, Bulgaria, antagonism between dermatophyte (*Trichophyton*

rubrum, *Epidermophyton* [*T.*] *interdigitale*, *T. gypseum* [*T. mentagrophytes*], and *Microsporum gypseum*) cultures and cultures of saprophytic fungi occurring on skin (*Hormodendrum* sp., *Penicillium* spp., *Aspergillus niger*, and *Candida* sp.) gave rise to characteristic pigmentation on colony boundaries. The cherry-red pigment from *P. purpurogenum* had a differential staining effect on dermatophytes.

82. Borstlap (A. C.). **The cultivation of dermatophytes on the air cell membrane of the Hen's egg.**—*Arch. Derm., Chicago*, **81**, 4, pp. 506–508, 1 fig., 1960.

At Univ. Hosp., Leiden, Netherlands, the possibilities of Neuhauser's eggshell membrane culture technique (*Ibid.* **75**, pp. 401–404, 1957 [cf. also **3**, No. 1131]) was further explored. The eggs used, never more than 3 days old, were inoculated raw or after boiling for 10 min. with the thick end upwards to prevent displacement of the air chamber. After application of iodine to the thick end a small hole was made through both shell and membrane, and then enlarged to about $\frac{3}{8}$ in. diam. by use of tweezers to permit inoculation at the centre of the membrane beneath. The hole was sealed by 2 pieces of transparent adhesive tape, placed crosswise. *Microsporon* [*Microsporum*] *audouinii*, *Epidermophyton floccosum*, *Trichophyton schoenleinii*, and *T. rubrum* grew better in boiled eggs than in raw ones, and better at 25° C. than at 37° C. Growth of these fungi was not noticeably affected by the presence of *Micrococcus pyogenes* var. *albus* and *Escherichia coli*, lending support to the view that the growth of fungi on the skin—in contrast to their growth in the digestive tract—is not inhibited by bacteria.

83. Kashima (R.). **V. Experimental tuberculoid tubercle evoked by Trichophyton crude fractions.**—*Bull. pharm. Res. Inst., Osaka*, 25, pp. 19–27, 5 fig., 1960.

This is an account from Gifu med. Coll., Japan, of the development of an anaphylactoid exudative inflammation, vasculitis (with fibrinoid degeneration), and tuberculoid granuloma in adult albino rabbits injected intracutaneously with crude protein or crude polysaccharide fractions of *Trichophyton mentagrophytes* var. *asteroides*, but not with crude lipid fractions, following spontaneous healing of experimental trichophytosis 40–50 days after a previous cutaneous inoculation on the back. The reaction was more intense when the 2nd inoculation was at the same site as the 1st.

84. Lostia (A.) & Chabert (G.). **Sul comportamento dei capelli rossi di fronte alla infezione in vitro da dermatomiceti.** [On the behaviour of red hair towards infection *in vitro* by dermatophytes.]—*Rass. med. Sarda*, **62**, 1, pp. 45–56, 1960. [Engl. summ. 4 ref.]

Studies at Univ. Cagliari showed that in contrast to the findings of Janke [**1**, No. 1980] red hairs do not possess a thicker cuticle than hairs of other shades and are not more resistant to attack by dermatophytes *in vitro*.

85. Ueckert (H.) & Röhrborn (G.). **Über Variabilität bei Dermatophyten.** [On variability in dermatophytes.]—*Zbl. Bakt.*, Abt. 1 (*Orig.*), **178**, 1, pp. 124–134, 1960. [Engl., Fr., Span., Russ. summ. 29 ref.]

The temporary and permanent variations observed over a 4-yr.-period at Freie Univ., Berlin, in *Trichophyton mentagrophytes*, *T. rubrum*, *T. tonsurans*, *T.* [*Microsporum*] *ferrugineum*, *T. violaceum*, and *T. megninii*, cultured under (*a*) constant and (*b*) differing environmental conditions, are described.

86. Ueckert (H.). **Morphologie und Taxonomie der Dermatophyten. I. Morphologische Studien an Dermatophyten auf Czapek-Dox-Agar.** [Morphology and taxonomy of dermatophytes. I. Morphological studies of dermatophytes on Czapek-Dox agar.]—*Bull. pharm. Res. Inst., Osaka*, 25, pp. 1–14, 5 fig., 1960.

This paper from Freie Univ., Berlin, describes the successful growth of single spore

cultures of *Epidermophyton floccosum*, *Trichophyton mentagrophytes*, and *Microsporum canis* on Czapek-Dox agar at 23±1° C. Macroscopic and microscopic features of the cultures are described, and data on the length and breadth, and numbers of cells in a sample of 100 macroconidia of each sp. are presented in graphical form [cf. **3**, No. 1261].

87. Ueckert (Sonja) & Ueckert (H.). **Über physiologische Wuchsformen bei Dermatophyten.** [On physiologic forms of growth in dermatophytes.]—*Zbl. Bakt.*, Abt. 1 (*Orig.*), **178**, 2, pp. 236–249, 12 fig., 1960. [40 ref. *B.H.*, **35**, p. 980.]

From a study of 48 isolates grown under standard conditions at Freie Univ., Berlin, the authors have attempted to standardize by latinizing a series of descriptive terms applied to macroscopic colony characteristics of dermatophytes. They distinguish two main types of 'rough structure' [form] of colony as 'planus' and 'tumulosus'—the latter sub-divided as 'verrucosus', 'acuminatus', 'hemisphaericus', 'cerebriformis', 'radiatus', and 'crateriformis'—and six main types of 'fine structure' [or texture] as 'granulosus', 'lanosus', 'floccosus', 'funiculosus', 'velvetus', and 'faviformis'. This nomenclature is illustrated by a series of figures of diverse dermatophytes to which the appropriate latin descriptions are given, e.g. a colony of *Trichophyton schoenleinii* is designated 'cerebriformis; faviformis, partim faviformis gypseus partim faviformis velvetus'.

88. La Touche (C. J.). **Mouse favus due to Trichophyton quinckeanum (Zopf) Macleod & Muende : a reappraisal in the light of recent investigations. IV.**—*Mycopathologia*, **13**, 1, pp. 33–47, 23 fig., 1960. [16 ref.]

This final paper [cf. **3**, No. 1446] reports a study of 8 strs. of *T. quinckeanum* in the author's possession. He considers that, on the basis of morphology in tissue and on cultural media, the fungus should be referred to *Trichophyton*, while within that genus its microscopic morphology in culture would justify its inclusion in the group species *T. mentagrophytes*. It is emphasized that it differs from other members of this group sp. in several respects, viz. its ability to produce scutula in hair-bearing animals and occasionally in man; its larger arthrospores in infected hair follicles; and its ability to cause, under Wood's light, a green fluorescence in invaded animal hair.

89. Hejtmánková-Uhrová (Nora). **Interessante Chemomorphose bei Trichophyton gypseum Bodin 1902.** [Interesting chemomorphosis in *T. mentagrophytes*.]—*Naturwissenschaften*, **47**, 13, p. 309, 2 fig., 1960.

Of 17 *T. mentagrophytes* strs. grown on Sabouraud's glucose agar containing phenylmercury-dibutyl-naphthyl-sulphonate (0·62 and 1·25%) 13 developed faviform colonies, dull cream or sometimes violet-tinged and indistinguishable from those of *T. violaceum*, indicating a genetic relationship to this species. The colonies consisted of spherical cells from which short, very crooked hyphae emerged. Subcultures on the same medium without the chemical gave rise to normal colonies.

90. Szathmáry (S.) & Herpay (Z.). **Perithecium-formation of Microsporon gypseum and its cognati ; Epidermophyton radiosulcatum var. flavum Szathmary 1940 on soil.**—*Mycopathologia*, **13**, 1, pp. 1–14, 19 fig., 1960. [Germ. summ.]

At Univ. med. Sci., Debrecen, Hungary, *Microsporon* [*Microsporum*] *gypseum* strs. from soil and from human skin lesions formed perithecia when grown on human and/or animal hair on soil. The perithecia have a peridium of thick, septate, usually curved filaments consisting of cells 6–7 $\mu \times 18$–20 μ with a sparsely granulated surface and sometimes slightly constricted in the middle. The asci are round, thin-walled, 6 μ diam., containing 6 ovate or round, smooth ascospores 3 $\times$ 2 μ–3 $\times$ 3 μ.

The perithecia of *E. radiosulcatum* var. *flavum* are identical with those of *M. gypseum* except that they bear spiral hyphae 1·6-2 μ thick with few or many convolutions.

91. Batista (A. C.), De Siqueira (M. W.), & Campos (S. T. C.). **Tilachlidium roseum v. Szilvinyi—associado a uma dermatose humana.** [*T. roseum* associated with a human dermatosis.]—*Publ. Inst. Micol. Univ. Recife*, 259, 11 pp., 2 fig., 1960. [Engl., Germ. summ.]

T. roseum was isolated at Recife, Brazil, from a skin lesion on an 18-yr.-old girl, but from the negative results of rabbit inoculations the authors conclude that it was not pathogenic.

92. Rodriguez (M. A.) & Gonzalez-Benavides (J.). **Tinea nigra palmaris en México. Aislamiento de Cladosporium werneckii en el Estudo de Nuevo Leon.** [Tinea nigra palmaris in Mexico. Isolation of *C. werneckii* in the State of Nuevo León.]—*Rev. lat.-amer. Microbiol., Méx.*, **2**, 4, pp. 199–205, 4 fig., 1959. [12 ref.]

The 2nd reported case in Mexico. Considering the climate the authors think that more cases should be seen.

93. Wells (B. T.), Whyte (H. J.), & Kierland (R. R.). **Pityriasis alba : a ten-year survey and review of the literature.** —*Arch. Derm., Chicago*, **82**, 2, pp. 183–189, 2 fig., 1960. [18 ref.]

All 67 cases seen at the Mayo Clinic over the period 1950–59 were Caucasians and 81% were children of prepubertal age. No evidence was found to support the hypothesis of a bacterial or fungal etiology.

94. Murray (I. G.), Spooner (E. T. C.), & Walker (Jacqueline). **Experimental infection of Mice with Madurella mycetomi.**—*Trans. roy. Soc. trop. Med. Hyg.*, **54**, 4, pp. 335–341, 4 fig., 1960.

At the London Sch. Hyg. trop. Med. grains of *M. mycetomi* similar to those formed in human lesions were produced in the peritoneal structures of white mice [**3**, No. 248] following intraperitoneal injection of a mixture of 4 mg. or more of *M. mycetomi* and an adjuvant of 4 mg. or more of killed *Mycobacterium tuberculosis* suspended in 0·9% NaCl, nutrient broth, or water. Multiple grains were also produced, but less regularly, by repeated injections of *M. mycetomi* alone, and a few (1–36) grains were formed in 7 of 140 mice which had received a single dose of the fungus alone.

95. Bocobo (F.), De Leon (D.), & Reyes (A.). **Black grain maduromycosis. (First case reported in the Philippines.)**—*J. Philipp. med. Ass.*, **36**, 5, pp. 345–350, 3 fig., 1960. [13 ref. *T.D.B.*, **57**, p. 1216.]

Madurella grisea was isolated from a firm mass on the dorsum of the right foot of a 37-yr.-old farmer who had sustained laceration from a bamboo splinter a year earlier. The macroscopic, microscopic, cultural, and biochemical characters of the pathogen are described.

96. Toigo (A.). **Pulmonary aspergillosis.**—*Amer. Rev. resp. Dis.*, **81**, 3, pp. 392–396, 6 fig., 1960. [Span., Fr. summ. *B.H.*, **35**, p. 656.]

Unusual features in the case of infection by *Aspergillus niger* in a 55-yr.-old patient at the Veterans Administration Hosp., Hines, Ill., included the rapid spread of the fungus with the formation of multiple abscesses in both upper lobes during a period of clinical well-being. Death was attributed to the extension of an abscess into a major branch of the pulmonary artery.

97. Hadorn (W.). **Aortenruptur durch Aspergillusinfektion nach Operation einer Aortenstenose. Endaortis polyposa mycotica.** [Rupture of the aorta through infection by *A.* after operation for aortic stenosis. Endaortis polyposa mycotica.]—*Schweiz. med. Wschr.*, **90**, 34, pp. 929–934, 6 fig., 1 diag., 1960. [Engl. summ. 23 ref.]

A detailed report from the Med. Klin., Univ. Bern, of the clinical and anatomopathological aspects of a fatal case of infection of the sutures by *A. fumigatus*, following an operation by the open-heart method on a 25-yr.-old man which resulted in embolism in various organs and the rupture of the aorta into the pleural cavity. The diagnosis was established during life by examination of embolic material from the legs. Attention is drawn to the need for scrupulous care in the sterilization of all extra-corporeal circulation equipment and to the risks of antibiotic and hormonal treatment.

98. Horter (R.). **Aspergillus-Dermatomykose bei abortierten Rinderfeten.** [*Aspergillus* dermatomycosis in aborted bovine foetuses.]—*Dtsch. tierärztl. Wschr.*, **67**, 14, pp. 380–383, 2 fig., 1960. [Engl. summ.]

At the Staatlichen Veterinäruntersuchungsamt, Munster, Westf., dermatomycosis due to *A. fumigatus* was identified as the cause of abortion of 2 foetuses, 6 and 7 months old. In both cases the hyphae were confined to the foetal epidermis and the placental membrane, and the fungus had entered the intestine along with swallowed amniotic fluid. The parenchymatous organs were not involved.

99. O'Meara (D. C.) & Chute (H. L.). **Aspergillosis experimentally produced in hatching Chicks.**—*Avian Diseases*, **3**, pp. 404–406, 1959. [*V.B.*, **30**, No. 1370.]

Chicks in the process of hatching and up to 2 days of age were easily infected with *Aspergillus fumigatus* spores by contaminating the forced draught incubator with wheat which had been inoculated with the fungus. Older chicks were more resistant.

100. Walkup (H. E.). **Blastomycosis.**—*W. Va med. J.*, **56**, 6, pp. 187–190, 1960.

Essential information on the portal of entry of *Blastomyces dermatitidis*, its growth, immunological reactions, symptoms, and treatment is presented. From his experience of 20 patients at the Veterans Administration Hosp., Oteen, N. Carol., and a study of the literature the author concludes that current methods of therapy are very defective. Aromatic diamidines are useful drugs but a high proportion of patients suffer relapses following treatment. Surgery without drug coverage involves considerable risk, as demonstrated by the appreciable number of cases of dissemination during the post-operative period. At the moment the data are insufficient for the adequate appraisal of the potentially more effective amphotericin B.

101. McDonough (E. S.), Ajello (L.), Georg (Lucille K.), & Brinkman (Sherry). **In vitro effects of antibiotics on yeast phase of Blastomyces dermatitidis and other fungi.**—*J. Lab. clin. Med.*, **55**, 1, pp. 116–119, 1960. [7 ref. *B.H.*, **35**, p. 981.]

At the Communicable Disease Center, Chamblee, Ga, 9 *B. dermatitidis* strs. were more sensitive to cycloheximide (actidione) at 37° than at 25° C. At 37° 2 isolates failed to grow on media containing 0·4 mg./ml. actidione. Chloramphenicol had a lesser but similar effect. A 25° to 37° sensitivity differential existed to a lesser extent for some strs. of *Histoplasma capsulatum* and *Sporotrichum schenckii* but not for *Paracoccidioides brasiliensis*.

102. Edwards (G. A.) & Edwards (M. R.). **The intracellular membranes of Blastomyces dermatitidis.**—*Amer. J. Bot.*, **47**, 8, pp. 622–632, 11 fig., 1960.

At the Div. Labs. Res., N.Y. State Dept Health, Albany, yeast phase cells of *B. dermatitidis*, studied in thin sections by electron microscopy, were found to be multinucleate, with the nuclei frequently interconnected by their outer limiting membranes. The cell is bordered by a cell wall and the plasma membrane, which may be seen in direct continuity with the nuclear envelope. The cytoplasm contains numerous mitochondria, many profiles of the endoplasmic reticulum, and few multivesicular bodies. The membranes of all constant cellular components are interconnected. Mitochondria are apparently formed from any of the several membrane systems. The micromorphology of the cell suggests efficiency of communication, and cytoplasmic mobility.

103. Gordon (C. A.) & Stewart (W. B.). **Treatment of North American blastomycosis with amphotericin B.**—*Canad. med. Ass. J.*, **82**, 9, pp. 471–473, 4 fig., 1960. [*T.D.B.*, **57**, p. 639].

The 1st case of systemic infection by *Blastomyces dermatitidis* to be recognized in Nova Scotia is reported from the Victoria General Hosp., Halifax. A satisfactory recovery followed a course of amphotericin B therapy, but a complication in the form of acute agranulocytosis developed during treatment.

104. Badame (F. G.) & Peck (G. K.). **Blastomycosis in a Dog.**—*Canad. vet. J.*, **1**, 4, pp. 177–179, 1960.

A 5-yr.-old wire-haired terrier, with a 4-yr. history of coughing, was submitted to the Ontario Vet. Coll. *in extremis*. Blastomycosis [*Blastomyces dermatitidis*] was diagnosed after death, and post-mortem findings are given [**3**, No. 1779].

105. Marples (Mary J.). **Microbiological studies in western Samoa. II. The isolation of yeast-like organisms from the mouth with a note of some dermatophytes isolated from lesions of tinea corporis.**—*Trans. roy. Soc. trop. Med. Hyg.*, **54**, 2, pp. 166–170, 1960.

A report from Dept Microbiol., Univ. Otago, New Zealand, of the examination of mouthwashings taken from 251 persons 3–60+-yr.-old. Yeast-like organisms were recovered from 25% of the children and 40% of the adults. *Candida albicans* was isolated from 14% of the children and under 30% of the adults. Only $\frac{2}{3}$ of the yeasts isolated were *C. albicans*; the remaining $\frac{1}{3}$ included *C. guilliermondii*, *C. parapsilosis*, *C. krusei*, *C. tropicalis*, and 10 unidentified yeast-like organisms. Yeast-like organisms were not associated with severe caries or gingivitis or tonsillar enlargement. Their incidence, especially that of *C. albicans* ($P < \cdot001$), was significantly lower than in Dunedin, New Zealand [**1**, No. 2460]. The presence of *Trichophyton mentagrophytes*, *T. rubrum*, *T.* (*tonsurans* var.) *sulphureum* [*T. sulfureum*], and *T. concentricum* in Samoa is recorded.

106. Bernhardt (Hannelore). **Die Pilzarten des Sputums.** [The fungus species of the sputum.]—*Zbl. Bakt.*, Abt. 1 (*Orig.*), **178**, 4, pp. 515–522, 2 fig., 1960. [Engl., Fr., Span., Russ. summ. 16 ref. *B.H.*, **35**, p. 982.]

The sputa of 80% of the 300 patients examined at the Medizinischen Universitätsklinik und Poliklinik, Greifswald, Germany, yielded fungi, ranging in extent from a few colonies to a dense, confluent growth. *Candida albicans* comprised approx. 50% of the isolates, *C. tropicalis* 15, *Saccharomyces fragilis* and *C. pseudotropicalis* 8–10, and *Torulopsis* spp. (including *T. glabrata*) 1·05–5·4.

When the results were analysed according to the diseases *C. albicans* occurred in 61% of patients with pulmonary tuberculosis, 58% with carcinoma, 40% with lung diseases other than tuberculosis, and 52% with other conditions. No other

obvious pattern was shown for the number of different species associated with these conditions was directly correlated with the number of cases examined.

107. Baum (G. L.). **The significance of Candida albicans in human sputum.**—*New Engl. J. Med.*, **263**, 2, pp. 70–73, 3 fig., 1960. [37 ref.]

At the Veterans Administration Hosp., Cincinnati, Ohio, sputum specimens from 55 patients, 34 hospital employees, and 30 healthy medical students were examined for the presence of fungi. In the 1st group 30 (55%) were positive for *Candida* (15 identified as *C. albicans*), in the 2nd 12 (36%), with 5 *C. albicans*, and in the 3rd 6 (20%), with 4 *C. albicans*. Within each group were a number of samples positive for common moulds, while the sputum of 1 patient yielding *C.* sp. also gave rise to *Histoplasma capsulatum* several weeks later.

Infection by *C. albicans* in these series is believed to have originated in the mouth and little significance is attributed to its detection in the sputum in relation to the diagnosis of pulmonary moniliasis.

108. Solari (M. A.) & Fernandez (M. N. G. de). **Rinopatía obstructiva y Candida albicans.** [Obstructive rhinitis and *C. albicans*.]—*Día méd.*, **32**, 11, p. 236, 1960.

A case of 11 yr. duration in a 48-yr.-old female is reported from Buenos Aires, Argentina. A skin test with *C. albicans* antigens was positive and cultures were obtained from the faeces. After treatment with nystatin for 15 days the patient improved and cultures became negative. A relapse occurred 5 days later; the treatment was repeated and the patient became asymptomatic. A 2nd case is being treated with nystatin and by desensitization.

109. Tsinzerling (A. V.). Об оценке значения высева грибков рода **Candida** из легких. [On assessing the importance of fungi of the genus *Candida* isolated from lungs.]—*Klin. Med., Mosk.*, **38**, 10, pp. 88–90, 1960. [Engl. summ.]

This paper from the Dept Path., Naval military Hosp., Moscow, gives results from 53 cases of pneumonia differing in etiology, including mycological studies. *Candida* spp. were isolated in 46 cases; *Mucor* spp. in 2. There were 28 cases of *C. albicans*, 3 of *C. pseudotropicalis* and of *C. tropicalis*, and 1 of *C. krusei*. In 1 case both *C. albicans* and *C. pseudotropicalis* were isolated. In 5 cases *Candida* spp. together with other mixed microflora played an active part in the development of pneumonia. The fungi were not pathogenic in the remaining cases, though in 29 individual yeast-like cells were finally found in the inflammatory foci.

110. Akrawi (Y. Y.). **The biology of intestinal moniliasis.**—*J. Fac. Med., Baghdad*, **2** (N.S.), 2, pp. 63–69, 1960. [24 ref.]

It is concluded from a study at the Coll. Med., Baghdad, Iraq, of the occurrence of *Candida* spp. in the normal intestinal tract (200 cases) and in the faeces of patients suffering from various diseases or under antibiotic treatment (300) that infection is endogenous and may be caused by any sp. that happens to be present, e.g. *C. albicans*, *C. tropicalis*, *C. krusei*, and *C. stellatoidea* (listed in order of prevalence, the 1st-named being heavily predominant). Among the cases comprising the latter series were 8 of uncontrolled diabetes mellitus, 14 of various malignant conditions with marked cachexia and diarrhoea, 265 who had received antibiotic therapy within 10 days of the onset of enteritis, and 13 under treatment with cortisone or ACTH.

111. Talatt (S. M.). **Henna for intestinal moniliasis.**—*Brit. med. J.*, **2**, 5203, pp. 944–945, 1960.

From the Dept Med., Cairo Univ., Egypt, it is reported that 3 cases (1 detailed) of

intestinal moniliasis following prolonged antibiotic therapy were cured by treatment with 2 gr. henna powder 3 times daily after meals. The identification of *Candida albicans* was not confirmed by culture.

112. Mathur (S. P.). **Ocular complications in cutaneous moniliasis.**—*Ophthalmologica, Basel*, **139**, 2, pp. 112–113, 1 fig., 1960.

A case is reported from the P.B.M. Group of Hospitals, Bikaner, India, in which infection by *Candida albicans* in a 6-yr.-old boy affected the right side of the face and eyelids, nares, buccal mucosa, pharynx, and right forearm. The ocular complications comprised ulcerations covered with a white slough on the conjunctiva, simulating membranous conjunctivitis, and superficial concentric keratitis of the cornea. The skin lesions were treated with gentian violet paint and the conjunctival sac with aureomycin ointment, while tetracycline with mycostatin [nystatin] was taken orally. The ocular symptoms cleared completely in 7 days.

113. Rousset (J.), Coudert (J.), & Appeau (A.). **Sycosis et granulomes à Candida albicans consécutifs à une conjunctivite à virus de Newcastle chez un porteur d'un cancer pulmonaire (note complémentaire).** [Sycosis and granulomata due to *C. albicans* following a conjunctivitis caused by the Newcastle virus in a carrier of a pulmonary cancer (supplementary note).]—*Bull. Soc. franç. Derm., Paris, 1960*, 2, pp. 362–364, 1960.

A detailed case report of a 52-yr.-old laboratory worker whose sputum yielded *C. albicans*, *Penicillium* sp., *Aspergillus niger*, and *Geotrichum candidum*. *C. albicans* became generalized, causing granulomata with metastases, and finally involved the liver and brain.

114. Meyer (J.), Sartory (T.), Malgras (J.), Blum (E.), & Batzenschlager (A.). **Un cas de granulome testiculaire à blastomycètes.** [A case of testicular granuloma due to yeasts.]—*C.R. Acad. Sci., Paris*, **250**, 17, pp. 2959–2961, 1960.

On the basis of microbiological, histological, and serological studies the responsible fungus in this case appears to be a hitherto undetermined *Candida* sp. This is stated to be only the 2nd case of its kind on record, the 1st having been noted by E. Boutke (*Z. Urol.*, **48**, p. 787, 1955).

115. Drouhet (E.), Satge (P.), Wolf (A.), Habib (R.), & Vialatte (J.). **Candidose granulomateuse chez un Enfant guéri par l'amphotéricine B par voie intraveineuse.** [Granulomatous moniliasis in an Infant cured by amphotericin B by the intravenous route.]—*Bull. Soc. franç. Derm., Paris, 1960*, 2, pp. 192–195, 1960.

A full clinical report from the Hôpital Saint-Vincent-de-Paul, Paris, on the methods successfully employed in a case of cutaneous, oral, and digestive thrush caused by *Candida albicans*.

116. Galton (M.) & Benirschke (K.). **The implication of Candida albicans infection of the amniotic sac.**—*J. Obstet. Gynaec. Brit. Emp.*, **67**, 4, pp. 644–645, 3 fig., 1960.

This report from the Harvard med. Sch., Boston, Mass., is of a premature placenta with rupture of the marginal sinus, severe, chorio-amnionitis and a yeast infection of chorion and amnion. Marked yeast growth was present in the placenta and membranes in the absence of clinical monilial vaginitis.

117. Overgoor (G. H. A.). **Twee gevallen van mycotische mastitis bij het Rund.** [Two cases of bovine mycotic mastitis.]—*T. Diergeneesk.*, **85**, 1, pp. 29–34, 1960. [Engl., Fr., Germ. summ. *V.B.*, **30**, No. 2497.]

Descriptions, from the Laboratorium Gezondheidsdienst voor Dieren, Gelderland,

of 2 cases of bovine mastitis, both exhibiting general symptoms, with inflammation of 1 quarter, and both clearing in 3 weeks. The 1st was caused by *Candida krusei*. and the 2nd, a more severe infection, by an atypical form of *C. albicans*.

118. Kral (F.) & Uscavage (J. P.). **Cutaneous candidiasis in a Dog.**—*J. Amer. vet. med. Ass.*, **136**, 12, pp. 612–615, 1960. [*V.B.*, **30**, No. 3189.]

At the Sch. Vet. Med., Univ. Pa, Philadelphia, a case of chronic granulomatous dermatitis in a 7-yr.-old female Boxer yielded *Candida albicans* in pure culture. Sodium bismuth trigly-collamate tablets (containing 75 mg. bismuth) were given: 5 on the 1st day, 4 on the 2nd, 3 on the 3rd, 2 on the 4th, and 1 on the 5th and 6th days. The pustular lesions dried on the 9th day and no new lesions formed. When the agent had been identified, nystatin therapy, oral and topical, was instituted. On its completion the skin was only slightly thickened, and crusts and pigmentation had disappeared, but the affected areas remained hairless.

119. Scheifer (B.) & Weiss (E.). **Soormykose des Darmes bei Katzen.** [*Candida* mycosis of the intestine in Cats.]—*Dtsch. tierärztl. Wschr.*, **66**, 10, pp. 275–277. 1959. [Engl. summ. *V.B.*, **30**, No. 994.]

At the Inst. für Tierpathologie, Univ. Munich, autopsy of 2 cats with an anamnesis of infectious leucopenia revealed ulcerative enteritis, which was particularly severe in the colon. Cultures were not made, but *Oidium* [*Candida*] *albicans* was abundant in sections of the intestine.

120. Osborne (A. D.), McCrea (M. R.), & Manners (M. J.). **Moniliasis in artificially reared Pigs and its treatment with nystatin.**—*Vet. Rec.*, **72**, 13, pp. 237–241, 8 pl., 3 fig., 1960. [23 ref. *V.B.*, **30**, No. 2499.]

A report from the Dept Vet. Med., Univ. Bristol, on an outbreak of moniliasis in 41 piglets, of which 25 died. Lesions were present in the mouth, oesophagus, and stomach and cultures yielded *Candida albicans* (most frequent), *C. krusei*, *C. tropicalis*, and *C. slooffii*. Results of treatment with nystatin were indefinite. The piglets were weaned on a diet containing 0·0015% penicillin, but this is not considered to be a predisposing cause of the outbreak.

121. Jeoffery (S. M. S.) & Kenzy (S. G.). **Nutritional factors influencing experimental Candida albicans infection in Chickens. I. Effect of vitamin A deficiency.**—*Avian Diseases*, **4**, 2, pp. 138–151, 5 fig., 2 graphs, 1960. [*V.B.*, **30**, No. 3531.]

At the Dept Vet. Sci., Wash. agric. Exp. Stas., Wash. State Univ., Pullman, groups of 3-week-old unsexed chicks of the New Hampshire breed were divided into groups, some receiving a ration with vitamin A, and others the same ration without the vitamin. On the appearance of signs of vitamin deficiency in the birds on the deficient ration some of these birds, and some birds on the full ration, were challenged by introducing 145×10^6 cells from a 48-hr. Sabouraud agar culture directly into the crop by means of a pipette. Some birds were challenged once, others twice, and others, serving as controls, were not challenged. The culture used was from a natural case of moniliasis in a chicken. Lesions of moniliasis occurred in 10 of 16 birds on the deficient ration, compared with 1 of 14 on the complete ration. Signs of vitamin A deficiency were twice as frequent in the infected birds, compared with the non-infected controls. The fungus appeared in the faeces 11 days after the 1st exposure. The 2nd exposure, 27 days later, gave rise to a 3-fold yeast cell increase in faecal plate counts within 2 days.

All shedding of yeast cells appeared to cease 58 days after the initial exposure, though frank lesions were still present.

122. Pathak (R. C.). **A study on certain microorganisms in Poultry with special reference to the occurrence of Salmonella, Pleuropneumonia-like organisms, and Candida in Indian conditions.**—*Agra Univ. J. Res.*, **8**, 2, pp. 291–292, 1959.

At U.P. Coll. Vet. Sci. Animal Husbandry, Mathura, India, *C. albicans*, *C. krusei*, *C. tropicalis*, *C. parakrusei*, and *C. stellatoidea* were isolated. Two *C.* strs. did not conform to any common sp. occurring in man.

123. Scholer (H. J.). **Experimentelle Vaginal-Candidiasis der Ratte.** [Experimental moniliasis of the vagina in the Rat.]—*Schweiz. Z. Path.*, **23**, 1, pp. 62–68, 2 fig., 1960. [Fr., Engl. summ.]

In the technique here described from the Abteilung für experimentelle Medizin, Hoffmann-La Roche & Co. A. G., Basel, female albino rats of 100–120 g., spayed under ether, are, some 10–20 days later, given a subcutaneous injection of 1 mg. ovocyclin M. Ciba, which serves to keep them continuously in heat for at least 2 months. The course of vaginal moniliasis in rats in this condition is extremely regular, and the infection can thus be used for testing therapeutants, which may be given *per os*, or introduced into the vagina.

124. Winner (H. I.). **Experimental moniliasis in the Guinea Pig.**—*J. Path. Bact.*, **79**, 2, pp. 420–423, 8 fig., 1960. [*V.B.*, **30**, No. 2839.]

At the Dept Clin. Path., Charing Cross Hosp. med. Sch., London, injection of living *C. albicans* into the skin or peritoneal cavity of guinea-pigs produced a non-fatal self-limiting disease whether or not cortisone treatment was given. Intravenous injection produced a generalized infection, fatal when the inoculum was large. When proliferating in the tissues *Candida* excited little or no cellular reaction, and no enlargement of the spleen or lymph glands, though there was some cellular damage, possibly by toxic action. Death resulted from acute pulmonary congestion and oedema.

125. Kozinn (P. J.), Taschdjian (C. L.), Burchall (J. J.), & Wiener (H.). **Transmission of P^{32}-labeled Candida albicans to newborn Mice at birth.**—*J. Dis. Child.*, **99**, 1, pp. 31–34, 1960. [*B.H.*, **35**, p. 449.]

In this study [cf. **3**, No. 1647] 9 pregnant mice close to term were inoculated intravaginally at 24 hr. intervals with a labelled *C. albicans* str. The new-born mice were decapitated within 24 hr. of birth, and cultures were made of the mouth, gastro-intestinal tract, and from a dorsal flap of skin. The organism was recovered from the mouth and/or gastro-intestinal tract of 39 of 57 mice, and 9 of these also yielded positive skin cultures. These results are taken to indicate that children may be likewise infected by contact with vaginal infection during birth.

126. Drouhet (E.), Hirth (L.), & Lebeurier (Geneviève). **Mode d'action des antibiotiques antifongiques. 1. Action de l'amphotericine B sur le métabolisme respiratoire de Candida albicans.** [The mode of action of antifungal antibiotics. 1. The action of amphotericin B upon the respiratory metabolism of *C. albicans*.]—*Ann. Inst. Pasteur*, **98**, pp. 469–484, 10 graphs, 1960. [Engl. summ. 25 ref.]

A detailed account of work already noticed [**3**, No. 1014].

127. Tebyakina (Mme A. E.) & Chaĭkovskaya (Mme S. M.). Получение устойчивых к нистатину штаммов **Candida** и характеристика их свойств. [Obtaining *Candida* strains resistant to nystatin and their characteristic properties.]—Антибиотики [*Antibiotiki*], **5**, 2, pp. 91–95, 1960. [Engl. summ.]

At the All-Union sci. Res. Inst. for Antibiotics, 8 freshly isolated *C.* strs. were used to obtain resistant forms. Of 5 *C. albicans* strs., 3 were 6–8 times more resistant

after 50 passages on Sabouraud's agar containing increasing concs. of nystatin while 2 strs. of *C. stellatoidea* and 1 of *C. intermedia* had not changed their susceptibility after repeated passage. Changes were noted in the morphological, cultural, and biochemical properties of the resistant strs. which were biochemically more active but showed considerably reduced pathogenicity to chick embryos, and were completely non-pathogenic for white mice. They showed promise of resistance to all the antibiotics of the polyene group, as well as to albofungin.

128. Matsuo (Y.), Saito (H.), & Mito (T.). **The resistant strain of Candida albicans against trichomycin.**—*Nippon Saikingaku Zasshi*, **14**, pp. 29–31, 1959. [*Chem. Abstr.*, **54**, 18, col. 18670e, 1960.]

In experiments at the Hiroshima Univ. Sch. Med. the min. conc. of trichomycin inhibiting the growth of *C. albicans* [**3**, No. 1653] was 0·1–1 μg./ml., but a str. gradually developed which proved to be resistant to 10 μg./ml.

129. Perez (J. S.) & Gil (R. A.). **Estudios sobre la debariocidina. I. Acción in vitro sobre levaduras aisladas de enfermos tratados con antibioticos.** [Studies on debariocidin. I. *In vitro* activity against yeasts isolated from patients treated with antibiotics.]—*Microbiol. esp.*, **13**, 3, pp. 323–325, 1960.

The *in vitro* activity of debariocidin was tested at the Jaime Ferran Inst. Microbiol., Madrid, against the following organisms (all isolated from urinary tract infections treated with antibiotics): *Candida albicans* (33 strs.), *C. mycoderma* (1), *Rhodotorula glutinis* (6), *Torulopsis candida* (12), *T. famata* (7), *T. glabrata* (1), *T. versatilis* (6), and *Trichosporon cutaneum* (2). Only the *C. albicans* strs. were sensitive to the antibiotic.

130. Forni (P. V.). **Sulla patogenesi del fenomeno di Seligmann nel problema delle micosi secondarie ad antibiotici.** [On the pathogenesis of Seligmann's phenomenon in the problem of mycoses following antibiotics.]—Reprinted from *G. Mal. infett.*, **12**, 47 pp., 12 graphs, 1960. [Num. ref.]

In an investigation at Univ. Turin of Seligmann's phenomenon (showing that *Candida albicans* is non-pathogenic and aureomycin non-toxic when either is injected intraperitoneally into mice, though a mixture of the 2 is lethal [**1**, No. 2482]) using tetracycline in place of aureomycin [cf. **1**, No. 2483; **2**, No. 209], experiments on white mice indicated that the antibiotic appears to be the determining factor, the fungus merely serving to reveal the reduced resistance induced by the antibiotic.

131. Hill (D. W.). **Studies on the pathogenesis of experimental candidiasis.**—*Diss. Abstr.*, **20**, 8, p. 3019, 1960.

At Univ. Utah *Candida albicans* strs. varied widely in their virulence for mice. Str. Vet. # 4, which produced no acid from sucrose, was of high virulence. Following intravenous challenge the kidneys (often only the right one) were frequently the only organs to show significant involvement. Cortisone at 0·01–0·1 mg./day afforded significant protection to adrenalectomized mice, without obviously affecting the size, number, or distribution of lesions.

Yeast-like cells of *C. albicans* and *C. stellatoidea*, but not of other *C.* spp., showed morphological changes within 1 hr. after subcutaneous injection into mice: in *C. albicans* elongated pseudomycelia were formed within 1 hr., and this was thought to be possibly a protective response, hindering phagocytosis.

Attempts to prevent this morphological change by cysteine and glutathione, and to protect infected animals by repeated injection of glutathione or 2,3 dimercaptopropanol, were unsuccessful. The change did not occur when the animals were sacrificed [immediately] after subcutaneous injection, and incubated at 37° C. for

4 hr. It did, however, occur *in vitro* when the 2 spp., but not others, were incubated at 37° in sera, other protein solutions, or an aerated liquid medium.

Adrenalectomized mice were more susceptible to *C. albicans* endotoxin than were intact adults or 21-day-old females.

132. Kaden (R.). **Präcipitinreaktion bei Candidasis.** [Precipitin reaction in moniliasis.]—*Arch. klin. exp. Derm.*, **211**, pp. 323–328, 1 fig., 3 diag., 1960.

Using the agar diffusion method, the author found an affinity in antigenic structure between *Candida albicans*, *C. tropicalis*, *C. stellatoidea*, and *C. parapsilosis* but no relationship between the foregoing spp. and *C. krusei*, *C. pseudotropicalis*, and *C. brumptii*. The outcome of comparable tests with the same spp. and dermatophytes and other pathogenic fungi, was consistently negative except with *C. pseudotropicalis* which reacted weakly with *Trichophyton rubrum*, *T. tonsurans*, *T. schoenleinii*, *Microsporum canis*, and *M. gypseum*.

133. Pospíšil (L.) & Vlašín (Z.). **Zur Frage der serologischen Untersuchung bei oberflächlichen Candida-Infektionen.** [On the question of serological examination in superficial *C.* infections.]—*Dermatologica*, **120**, 4, pp. 223–230, 3 graphs, 1960. [Engl., Fr. summ.]

Further studies are reported from the Dermatologische Universitätsklinik, Brno, Czechoslovakia on the formation of antibodies in the rabbit after single or repeated intracutaneous or intravenous injections of *C. albicans* by means of complement, agglutination, and deviation reactions [**3**, No. 865]. At the same time the changes developing in the serum were followed through the reaction to Cd and TT at pH 4·2. Intravenous injections resulted in a negative response, whereas the use of the intravenous route caused a rise in the titre of the antibodies, reaching a max. at the 6th–7th day. No change occurred in the Cd and TT responses after 1 injection but the γ-globulins increased after repetitions, especially by the intravenous channel.

134. Sinski (J. T.). **The effectiveness of Pagano-Levin medium for the detection and identification of Candida albicans in clinical specimens.**—*J. invest. Derm.*, **35**, 3, pp. 131–133, 1960.

At Tulane Univ. Sch. Med., Dept Microbiol., New Orleans, La, 23 recent unidentified isolates from clinical moniliasis were cultured on Nickerson-Mankowski agar, for chlamydospore production [**2**, No. 341], and on Pagano-Levin medium [**3**, No. 1499] isolates negative to both tests being further tested for fermentation reactions. On Pagano-Levin there were 4 false positives and 1 false negative. The fact that most false reactions were positive was taken to indicate that the method is over-sensitive, and therefore particularly well suited for screening, though it must be supplemented by the other standard criteria for certainty in identification.

135. Newton (A.), Shaw (E. D.), Goode (Claire S.), & Riggall (F. O.). **Identification of Candida albicans.**—*J. invest. Derm.*, **35**, 3, p. 123, 1960.

At the Microbiol. Div., 3rd U.S. Army med. Lab., Fort McPherson, Ga, 164 strs. representing 7 *Candida* spp., and 18 other yeasts and yeast-like organisms, were examined by a modification of the method of Fahlberg *et al.* [**2**, No. 2368], using sheep blood. This was found to restrict the formation of filamentous-like colonies to *C. albicans* and *C. stellatoidea* only, though 3 *C. tropicalis* cultures formed spiny colonies similar to those of *Geotrichum candidum*.

136. Walker (Leila) & Huppert (M.). **A rapid, reliable technique for the identification of Candida albicans. Corn meal-tween agar : an improved medium for the identification of Candida albicans.**—*Amer. J. clin. Path.*, **31**, 6, pp. 551–558, 6 fig., 1959; **33**, 21, pp. 190–194, 6 fig., 1960. [Interlingua summ.]

The above-mentioned medium, used in conjunction with Weld's eosin methylene

blue and the rapid fermentation test [described in the 1st paper], is recommended from the Veterans Administration Hosp., San Fernando, Calif., for the differentiation of *C. albicans* from other *C.* spp.

137. Feo (Mildred). **Producción de clamidosporos en Candida albicans.** [Production of chlamydospores by *C. albicans.*]—*Rev. lat.-amer. Anat. Patol.*, **3**, 1–2, pp. 33–38, 1959. [Engl. summ.]

At the Inst. Medicina Tropical, Caracas, Venezuela, 29 *Candida* strs. were cultivated on Taschdjian's medium [**2**, No. 2367]. A drop of the medium on a slide placed in a petri dish was inoculated and covered with a cover glass. After 3 days at 28–30° C. all the 9 *C. albicans* strs. had produced typical chlamydospores. After 8–10 days 2 *C. tropicalis* strs. also produced chlamydospores.

138. Miyashita (S.), Miwatani (T.), & Fujino (T.). **Studies on the nutrition of Candida. I. Vitamin requirements of strains of Candida. II. Effects of amino acids on the growth of Candida albicans.**—*Biken's J.*, **1**, pp. 45–60, 1958. [*Chem. Abstr.*, **54**, 19, col. 19854i–19855a, 1960.]

At the Univ. Osaka, Japan, *C. krusei* and *C. parapsilosis* were found to be autotrophic for vitamins while *C. albicans*, *C. tropicalis*, *C. guilliermondii*, *C. pulcherrima*, and *C. variabilis* needed biotin; *C. rugosa* biotin and thiamine; *C. pseudotropicalis* biotin, pantothenic acid, and niacin; and *C. parakrusei* biotin, thiamine, pyridoxine, and niacin. Thiamine, pyridoxine, and pantothenic acid stimulated the development of *C. albicans*, *C. tropicalis*, and *C. guilliermondii*.

Glutamic and aspartic acids, arginine, proline, serine, and alamine, added to cultures of *C. albicans* on a glucose-Simmons medium enriched with appropriate quantities of biotin, enhanced growth and simultaneously exerted the so-called 'biotin-sparing' effect. Moreover, they were all capable of providing the sole source of N in the presence of glucose and biotin, but only the 3 1st-named could act as exclusive sources of both N and C.

139. Nozu (K.), Takagi (S.), Kamiki (T.), & Kashiwara (M.). **Respiratory system of Candida albicans.**—*Biken's J.*, **1**, pp. 35–44, 1958. [*Chem. Abstr.*, **54**, 18, col. 18666f, 1960.]

Oxidation of members of the tricarboxylic acid cycle by mitochondrial-like particles separated from *C. albicans* [see above] was demonstrated. The succinic dehydrogenase and oxidase activities were the most marked, the former being firmly bound to the particles, which were rich in ribonucleic acid and phospholipide. Cytochrome and cytochrome oxidase were present.

140. Bishop (C. T.), Blank (F.), & Gardner (P. E.). **The cell wall polysaccharides of Candida albicans : glucan, mannan, and chitin.**—*Can. J. Chem.*, **38**, pp. 869–881, 2 fig., 1960. [45 ref.]

At the Div. appl. Biol., Nat. Res. Council, Ottawa, cells of *C. albicans* were shown to contain, in addition to chitin, a glucan ($[\alpha]_D - 30°$) and a mannan ($[\alpha]_D + 78°$). The structure of these polysaccharides was investigated and compared with those in other yeasts.

141. Hajsig (M.) & Čuturić (S.). **Hyaluronidase in yeast-like fungi isolated from material of animal origin.**—*Vet. Arh.* (*Zagreb*), **30**, 3–4, pp. 61–64, 1960. [Croatian. Germ. summ. *V.B.*, **30**, No. 3190.]

Like pathogenic bacteria, pathogenic yeasts showed mucolytic activity of hyaluronidase in tests at Vet. Fac. Univ. Zagreb, Yugoslavia. The strs. examined were:

Candida tropicalis (2), *C. krusei*, *C. guilliermondii*, *Torulopsis candida*, *T. apicola*, *Rhodotorula rubra*, and *R. mucilaginosa* (1 each). The mucolytic activity attained its max. after ½–24 hr.

142. Koser (S. A.), Hodges (Eleanor), Tribby (Ilse), & Stuedell (Joan T.). **Growth of lactobacilli in association with Candida albicans.**—*J. infect. Dis.*, **106**, 1, pp. 66–68, 1960.

At Dept Microbiol., Univ. Chicago, strs. of *Lactobacillus casei*, *L. plantarum*, and *L. fermenti* grew in association with *C. albicans* in a medium originally lacking vitamins for the bacilli but satisfactory for the yeast. Substantial development of the heterofermentative *L. fermenti*, however, was secured only by the addition of an extra reducing agent and pentoses. Under comparable conditions or with added vitamin B_{12}, *L. acidophilus* made little or no growth.

After the introduction of fairly small amounts of inoculum, *L. casei*, *L. plantarum*, and *L. fermenti* attained numbers 50–100 (occasionally up to 500) million/ml. in the presence of the growing yeast. In the absence of the latter multiplication of the bacilli in the vitamin-deficient medium was restricted.

Essentially similar results were obtained in a few tests in which *Saccharomyces cerevisiae* was substituted for *C. albicans*.

The pH levels reached in the course of associated growth of an *L.* sp. and the yeast were generally less acid than those attained by the former alone.

Although *C. albicans* supported the growth of 3 of the 4 spp. of *L.* tested, its development was impeded to some extent, indicating a measure of antagonism.

143. Banič (S.). **Antagonistische Wirkung von Enterobacteriaceen auf Staphylokokken und Candida albicans.** [Antagonistic effect of Enterobacteriaceae on staphylococci and *C. albicans*.]—*Zbl. Bakt.*, Abt. 1 (*Orig.*), **180**, 1, pp. 27–29, 1960. [Engl., Fr., Span., Russ. summ.]

At the Microbiol. Inst., Med. Fac., Ljubljana, Yugoslavia, *Escherichia coli*, *Aerobacter aerogenes*, and *Salmonella* and *Shigella* spp. released a substance (probably corresponding to the 0-antigen) which inhibited the growth of *Staphylococcus* spp. and *C. albicans* in pure culture.

144. Mankiewicz (E.) & Liivak (M.). **Effect of Candida albicans on the evolution of experimental tuberculosis.**—*Nature, Lond.*, 187, 4733, pp. 250–251, 1960.

At the Royal Edward Laurentian Hosp. Lab., Montreal, following subcutaneous inoculation of guinea-pigs with suspensions of *M[ycobacterium] tuberculosis* and *C. albicans* the combined infection permitted a more rapid evolution of the tuberculous disease [cf. below]. In no case was there any disease of the liver, spleen, or lungs which could be attributed to *C. albicans*. The results indicated that within the 1st 2 months after infection *C. albicans* increased the invasiveness of the tubercle bacilli. This action can be compared with that of certain extra-cellular enzymes such as streptokinase or hyaluronidase, which are not directly toxic but act as spreading agents for the bacteria which produce them. However, no enzyme that acts on the dissemination of tubercle bacilli *in vivo* has so far been isolated from *C. albicans*. Simultaneous inoculation of 50 mg. of *C. albicans* polysaccharides reproduced, in lesser measure, the effect of the living yeast cells in increasing the early death-rate and the dissemination of the tubercle bacilli.

145. Kwapinski (J.) & Merkel (M.). **Die Entwicklung von Candida-Kolonien unter dem Einfluss chemischer Fraktionen anderer Organismen.** [The development of *C.* colonies under the influence of chemical fractions of other organisms.]—*Zbl. Bakt.*, Abt. 1 (*Orig.*), **177**, 3, pp. 410–420, 2 fig., 1960. [Engl., Fr., Span., Russ. summ. 14 ref.]

The influence of the above-mentioned substances on 7 strs. of *C. albicans* was studied

on liquid media by means of the stimulographic method (*Acta path. microbiol. scand.*, **45**, pp. 107–112, 1959, *et passim*). All the strs. utilized the phosphatide, polysaccharide, and nucleo-proteid fractions of *Mycobacterium tuberculosis*, and the phosphatide fractions of *M. phlei*, *Nocardia*, *Streptomyces*, and *Trichophyton*. *C. albicans* developed normally in solutions containing various mixtures of *M. tuberculosis* fractions.

146. Silveira (J. S.). **Kloeckera apiculata (Rees emend. Klöcker) Janke—seu assinalamento em pacientes do sexo feminino.** [*K. apiculata*, report of its presence in female patients.]—*Caderno Terapêutica*, **5**, 2, pp. 79–81, 1960.

At the Inst. de Micologia, Univ. Recife, Brazil, *K. apiculata* was isolated from urine (8 cases), faeces (3), saliva (1), and the genital secretion (1). *Rhodotorula mucilaginosa* was isolated from the genital secretion (1), and urine (1). *Candida krusei* was isolated from faeces (2), and urine (1). *Torulopsis glabrata*, *Geotrichum candidum*, *C. albicans*, *C. parapsilosis*, and *C. tropicalis* from faeces (1 case of each).

K. apiculata would appear to be a saprophyte, though it might become pathogenic. It was inhibited by cabimycin (trichomycin) *in vivo*.

147. Riopedre (R. N.), De Cesare (I.), Miatello (E.), Caria (M. A.), & Zapater (R. C.). **Aislamiento de Rhodotorula mucilaginosa del L.C.R., heces, orina, exudado faringeo y piel de un lactante de 3 meses.** [Isolation of *R. mucilaginosa* from the cerebrospinal fluid, faeces, pharynx, and skin of a 3-month-old Infant.]—*Rev. Asoc. méd. argent.*, **74**, 7, pp. 431–434, 1960. [Engl., Fr. summ.]

At the Dept Pediatrics, Univ. Buenos Aires, a yeast was seen in the cerebrospinal fluid of an infant with fever and meningoencephalitis, and *R. mucilaginosa* was cultured. Intestinal disturbances were also recorded and *R. mucilaginosa* was cultured from the faeces which were tinged red. The patient recovered without specific treatment.

148. Hajsig (M.) & Jakovac (M.). **Rhodotorula mucilaginosa u patološkom sekretu iz vimena Kobile (mastitis mycotica).** [*R. mucilaginosa* in the pathological secretion of the udder of a Mare (mycotic mastitis).]—*Vet. Arh.* (*Zagreb*), **30**, 7–8, pp. 203–207, 1960. [Engl., Fr. summ. 17 ref.]

At the Vet. Fac., Zagreb, Yugoslavia, *R. mucilaginosa* isolated from the watery excretion of the udder in pure culture on malt agar at 25° C. formed round, oval, or egg-shaped cells 2·5 -5 × 4–7 μ, single or double. A 1-month-old culture was red, smooth, mostly glossy and mucilaginous, without pseudomycelium. It assimilated glucose, galactose (feebly), saccharose, and maltose, but not lactose and KNO_3, and did not ferment carbohydrates. The presence of hyaluronidase was demonstrated. Inoculation of the udder of a healthy mare with a 3-day-old culture caused a rise of temp. (up to 39·2° C.) followed by symptoms of acute mastitis. Intravenous injections into rabbits and mice gave negative results.

149. Batista (A. C.), Vieira (J. R.), & Coêlho (R. P.). **Schwanniomyces hominis n.sp. corrio agente de lesao epidérmica em recem-nascido.** [*S. hominis* Batista, Viera, & Coêlho, agent of skin lesions in the newly born.]—*Publ. Inst. Micol. Univ. Recife* 175, 14 pp., 3 fig., 1960.

A Portuguese version of [**3**, No. 1862] with a Latin diagnosis to validate the name.

150. Manktelow (B. W.). **Yeasts of the genus Pityrosporum in the mammalian external auditory canal, with special reference to the Dog.** *N.Z. Vet. J.*, **8**, pp. 76–78, 1960.

At the Dept Microbiol., Univ. Otago, *P. canis* was isolated from 27 of 110 swabs from the ears of normal dogs. In an examination of the external ears of other

mammals, no yeasts were isolated from 7 cats either with or without otitis externa, and 1 yeast was obtained from 10 sheep. A new lipophilic yeast obtained from the ear of an opossum was very similar to *P. ovale.*

151. Batista (A. C.) & Silveira (J. S.). **Trichosporon figueirae n.sp. assinalado como fungo intestinal.** [*T. figueirae* Batista & Silv. described as an intestinal fungus.]—*Mycopathologia,* **12**, 3, pp. 196–198, 1 fig., 1960.

A description [and Latin diagnosis] is given from Univ. Recife, Brazil, of a fungus isolated from the faeces in 2 cases of diarrhoea in man. The condition cleared, and the fungus was no longer present in the faeces, after a 20-day course of mycostatin [nystatin] *per os.*

152. Castellani (A.). **A capsulated yeast producing black pigment : Cryptococcus ater n.sp.**—*J. trop. Med. Hyg.,* **63**, 2, pp. 27–30, 3 fig., 1960.

This note, from the Inst. trop. Med., Lisbon, gives a brief description of the above yeast isolated in March 1959 from an ulcer on the leg of an 18-yr.-old man at Cascais, Portugal.

153. Baker (K. C.) & Kemberling (S. R.). **Coccidioidal granuloma after treatment with amphotericin B. Report of a case.**—*Arch. Derm., Chicago,* **81**, 3, pp. 373–377, 1960. [*T.D.B.*, **57**, p. 847.]

A note from the Dept Pediatrics, Tucson Clinic, Ariz., on 3 cases of [*Coccidioides immitis*] infection which responded well to amphotericin B. The 1st was in a Papago Indian boy, diagnosed in 1953 when he was admitted with weeping lesions on the scrotum, gluteal fold, and the arms. The infection persisted and worsened in spite of various treatments, until he was readmitted in Mar. 1958, at the age of 9. From 17 Mar.–1 June he received a total of 800 mg., intravenously, which resulted in the healing of all lesions. Up to July 1959, 4 months after his last injection, there had been no recurrence. The other 2 cases, in Spanish-American men, are treated more briefly.

154. Longley (B. J.) & Mendenhall (J. T.). **The successful treatment of pulmonary coccidioidomycosis with intravenous amphotericin B.**—*Amer. Rev. resp. Dis.,* **81**, 4, pp. 574–578, 4 fig., 1960. [Span., Fr. summ. *T.D.B.*, **57**, p. 1217.]

A case is reported from the Veterans Administration Hosp., Madison, Wis., in which infection by *Coccidioides immitis,* empyaema, and broncho-pleural fistula in a 28-yr.-old patient responded satisfactorily to a 16-week course of intravenous amphotericin B therapy. At this stage a left pneumonectomy was performed, and the organisms recovered from the resected lung proved just as susceptible to the antibiotic as the pre-treatment cultures.

155. Castellot (J. J.), Creveling (R. L.), & Pitts (F. W.). **Fatal miliary coccidioidomycosis complicating prolonged prednisone therapy in a patient with myelofibrosis.**—*Ann. intern. Med.,* **52**, 1, pp. 254–258, 1960. [Interlingua summ. *T.D.B.*, **57**, p. 526].

A 43-yr.-old white woman, with a 7-yr. history of myelofibrosis, developed disseminated coccidioidomycosis (*Coccidioides immitis*) during the course of prolonged prednisone therapy. This report, thought to be the 1st of its kind for this disease, indicates the dangers of the acquisition, activation, or dissemination of coccidioidomycosis during steroid therapy. This danger is already well known in regard to tuberculosis and histoplasmosis.

156. Lacaz (C. S.), Mendes (E.), Fontes (P. B. C.), Milksche (C. R.), & Salomao (T.). **Ensaios preliminares com a prova da coccidioidina em nosso meio.** [Pre-

liminary assays with coccidioidin in Brazil.]—*Rev. Hosp. Clin. Fac. Med. S. Paulo*, **15**, 2, pp. 108–110, 1960. [Engl. summ.]

Records 1 positive reaction among 750 individuals in Brazil.

157. McNall (E. G.), Sorensen (L. J.), Newcomer (V. D.), & Sternberg (T. H.). **The role of specific antibodies and properdin in coccidioidomycosis.**—*J. invest. Derm.*, **34**, 3, pp. 213–217, 1960. [*T.D.B.*, **57**, p. 944.]

At Univ. Calif. med. Center, Los Angeles, 2 polysaccharide fractions were obtained from vigorously growing mycelium of *Coccidioides immitis* Barry str., raised on mycophil broth at 37° C. under highly aerobic conditions. The insoluble fraction P_1X was antigenic, and at low conc. partially protected mice challenged with a heavy inoculum only 2 weeks after injection. The lipopolysaccharide fraction P_1L was partially characterized, and found to bind properdin (cf. Newcomer *et al.*, *Ibid.*, **30**, pp. 233–236, 1958). The chemical characteristics of the cell wall polysaccharides of this fungus and of *Histoplasma capsulatum* and *Blastomyces dermatitidis* may explain the cross-reactions between the antigens derived from them.

158. Rapaport (F. T.), Lawrence (H. S.), Millar (J. W.), Pappagianis (D.), & Smith (C. E.). **Transfer of delayed hypersensitivity to coccidioidin in Man. The immunologic properties of coccidioidin as a skin test reagent in Man.**—*J. Immunol.*, **84**, 4, pp. 358–373, 1960.

The results of a joint study at N.Y. Univ. Coll. Med., Bellevue Hosp., N.Y., and the Naval biol. Lab., Univ. Calif., Berkeley, are tabulated and fully described. Generalized delayed sensitivity was found to be transferable to human subjects with desoxyribonuclease (DN)-treated leucocyte extracts obtained from sensitive donors. The process was accomplished in 23 of 27 consecutive experiments with leucocyte extracts from moderately to markedly sensitive donors and in 5 of 8 with material from minimally to moderately sensitive persons. Sensitivity to coccidioidin may persist for 15 month after transfer in the absence of exposure to *Coccidioides immitis* or repeated skin-testing.

Repeated intradermal testing of negative reactors with coccidioidin alone did not ordinarily induce delayed sensitivity, which may, however, develop following the same procedure in subjects with weak or latent sensitivity. Healthy persons living in an area endemic for coccidioidomycosis may exhibit delayed allergy to the antigen in the absence of detectable complement-fixing antibody, and occasionally serum antibody may occur in such subjects without delayed allergy.

These findings are considered to indicate the existence of parallelism between fungal hypersensitivity and bacterial allergy of the tuberculin type.

159. Levine (H. B.), Cobb (J. M.), & Smith (C. E.). **Immunity to coccidioidomycosis induced in Mice by purified spherule, arthrospore, and mycelial vaccines.**—*Trans. N.Y. Acad. Sci.*, Ser. II, **22**, 6, pp. 436–449, 3 fig., 1960. [22 ref.]

At the Naval Biol. Lab., Sch. Publ. Hlth., Univ. Calif., Berkeley, the spherule-endospore phase of *Coccidioides immitis* [**3**, No. 1334] was produced *in vitro* and purified by procedures that removed other morphological forms of the fungus. After sterilization with formalin, the immunizing properties of this phase were compared in mice with those induced by mycelial and arthrospore vaccines. The protection conferred by the spherule-endospore vaccine proved to be superior to that afforded by the other preparations. After a 90–105 days observation, residual lesions in vaccinated survivors contained viable organisms, but infection appeared to be least extensive in those treated with the spherule-endospore vaccine.

160. Lones (G. W.) & Peacock (C. L.). **Role of carbon dioxide in the dimorphism of Coccidioides immitis.**—*J. Bact.*, **79**, 2, pp. 308–309, 3 fig., 1960. [*T.D.B.*, **57**, p. 1216.]

At Nat. Inst. Allergy and Infectious Diseases, Bethesda, Md, Converse's method for culturing the spherule stage of *C. immitis* [**3**, No. 105] has been adapted for prolonged serial culture.

200 ml. volumes of glucose-ammonium acetate medium, containing 0·05% Tamol, are placed in 1 l. Erlenmeyer flasks, and inoculated with spherules at 2·0 mg. dry wt./ml., after which the flasks are plugged with cotton wool and incubated for 16 hr. at 34–35° C. on a rotary shaker (1 in. stroke, 112 cycles/min.). The density achieved by this procedure is approx. 4·0–4·5 mg. dry wt./ml. When transfers have been made to fresh medium the cultures are centrifuged to recover the spherules.

In preliminary studies it was observed that spherule development, with a min. of mycelial development, was favoured by a large inoculum (2·0 mg./ml.), while mycelial growth was relatively heavy with a small inoculum (0·2 mg./ml.), when the cultures were incubated in air. With a mixture of 90% air and 10% CO_2, however, mycelial growth was suppressed even with the small inoculum. From this it would seem that the advantage of the larger inoculum is due to the greater conc. of metabolic CO_2 achieved in the cultures.

161. Mumenthaler (M.). **Meningoencephalitis durch Cryptococcus neoformans.** [Meningo-encephalitis caused by *C. neoformans*.]—*Schweiz. med. Wschr.*, **90**, 14, pp. 386–391, 9 fig., 1960. [Engl. summ. 57 ref. *B.H.*, **35**, p. 655.]

Detailed report and discussion of the 4th case in Switzerland, a 69-yr.-old female patient at the Neurologische Universitätsklinik, Zürich.

162. Pasqualucci (M. E. A.). **Ocorrencia de lesões tumoriformes na criptococose cerebral e de cutros orgãos.** [Tumours in cryptococcosis of the brain and other organs.]—*Hospital (Rio de J.)*, **58**, 1, pp. 139–147, 1960. [Engl. summ.]

Report of 2 cases of cryptococcosis (*Cryptococcus neoformans*) with multiple cerebral lesions and meningitis. One case also showed a lesion of an adrenal gland.

163. Fitzpatrick (M. J.) & Poser (C. M.). **The management of cryptococcal meningitis.**—*Arch. intern. Med.*, **106**, 2, pp. 261–270, 6 fig., 1960. [26 ref.]

From the Univ. Kansas Sch. Med., Kansas City, comes a report of 6 cases of cryptococcal meningitis (*Cryptococcus neoformans*) in 4 of which the diagnosis had been established on clinical evidence. Of 3 patients who died, 1 had received amphotericin B. All of the 3 patients who survived had intravenous therapy with amphotericin B. The altered appearance of cryptococci in the meninges and spinal fluid of patients treated with amphotericin B was noted.

164. Kruyt (R. C.). **Torulosis van het centrale zenuwstelsel behandeld met amfotericine B.** [Torulosis of the central nervous system treated with amphotericin B.]—*Ned. Tijdschr. Geneesk.*, **104** (ii), 29, pp. 1370–1373, 1 fig., 1960. [Engl. summ.]

A 28-yr.-old male patient at the Gemeentiziekenhuis aan de Coolsingel, Rotterdam, was cured of infection due to *Cryptococcus neoformans* by intravenous injections with amphotericin B (total of 1·5 g.).

165. Smith (G. W.), Kemp (J. A.), Farrar (W. E.), Kemble (J. W.), & Philpot (De S. F.). **Cryptococcosis of the central nervous system : four cases treated with amphotericin B.**—*Sth. med. J.*, **53**, 3, pp. 305–311, 3 graphs, 1960.

Full clinical details are given of the course of infection by *Cryptococcus neoformans* in 3 male patients aged 46, 49, and 39 (coloured) and a 17-yr.-old female at the

Eugene Talmadge Hosp., Augusta, Ga. The disease may simulate intracranial mass lesions, such as brain tumours, or tuberculous meningitis. The initial results of amphotericin B therapy were successful, but it is emphasized that the drug is fungistatic rather than fungicidal, necessitating a long-term follow-up to determine the final outcome. The metabolic complications of azotaemia (which occurred in 2 of the patients), hypokalaemia, and anaemia are discussed.

166. Stein (J. M.) & Burdon (P. J.). **Cryptococcus neoformans infection of the central nervous system : a case treated by amphotericin B, with post-mortem examination.**—*Ann. intern. Med.*, **52**, 2, pp. 445–453, 5 fig., 1960. [12 ref.]

A report from med. and Neurological Service, Veterans Administration Hosp., Topeka, Kansas, of a case in a 40-yr.-old white man. Infection probably occurred *via* a skin lesion on the chest, during corticosteroid treatment for rheumatoid arthritis. Intravenous administration of amphotericin B induced chemical phlebitis, and the drug was withdrawn following the development of thrombocytopaenia, transient elevations of blood urea N, and diffuse itching.

At post-mortem examination massive destruction of both adrenals was noted.

167. Durant (J. R.), Epifano (L. D.), & Eyer (S. W.). **Pulmonary cryptococcosis : treatment with amphotericin B.**—*Ann. intern. Med.*, **53**, 3, pp. 534–547, 6 fig., 1960. [Interlingua summ.]

The occurrence of 3 cases of pulmonary infection by *Cryptococcus neoformans* during a 3-yr. period in a 300-bed naval hospital at Charleston, S. Carolina, lends support to the view expressed in the relevant literature that this entity is not rare, and should be considered in the differential diagnosis of 'coin lesions', unresolved or slowly resolving pneumonia, and lung infiltration of doubtful etiology. Meningeal involvement by the fungus is usually preceded by pulmonary disease, which may be demonstrated by periodical chest X-ray.

The gradual improvement in the clinical and X-ray pictures in the 2 patients treated with amphotericin B adds to the growing weight of evidence for its efficiency against *C. neoformans*. In the writers' experience, side reactions provoked by the antibiotic are controllable, e.g. by periodical injections of 1% procaine for the prevention of thromophlebitis.

168. Dormer (B. A.) & Findlay (M.). **Generalized cryptococcosis with osseous involvement.**—*S. Afr. med. J.*, **34**, 29, pp. 611–613, 4 fig., 1960.

The initial features in the case of a 14-yr.-old male Bantu herein reported from King George V Hosp., Durban, were pulmonary and subcutaneous. The multiple osseous lesions which developed subsequently were all osteolytic and resembled tuberculous infection radiologically. The patient responded favourably to amphotericin B therapy.

169. Harland (W. A.). **Cryptococcosis : a report of five cases.**—*Canad. med. Ass. J.*, **83**, 11, pp. 580–584, 7 fig., 1960.

In 2 of the patients included in this report from the Jewish Gen. Hosp., Montreal, infection by *Cryptococcus neoformans* was associated with Hodgkin's disease, and in 1 each with polycythaemia vera, malnutrition, and chronic renal failure. Diabetes mellitus was present in 2 cases. Infection was disseminated in 4, producing the characteristic symptoms of meningo-encephalitis. The series comprised 4 women aged 20–63 and a 74-yr.-old man.

170. Smith (Flora). **Cryptococcosis and associated Hodgkin's disease. Report of two cases.**—*N.Z. med. J.*, **59**, 334, pp. 285–288, 5 fig., 1960.

In both patients (males aged 61 and 40) at the Auckland Hosp. the diagnosis of Hodgkin's disease was established by lymph node biopsy. In 1 case the diagnosis of

cryptococcosis (*Cryptococcus neoformans*) was made only after histological examination of the autopsy material. In the 2nd the fungus was detected in the cerebrospinal fluid a fortnight before death and actidione was administered. Post-mortem examination revealed immense numbers of fungal elements in all organs dissected. With reference to the failure to find the pathogen in the lymph nodes removed from these patients during life, it is pointed out that *C. neoformans* is not easily perceived in sections stained with H. and E., for which the substitution, e.g. of the capsule-staining mucicarmine, toluidine blue, or P.A.S. is recommended.

171. BACKHOUSE (T. C.) & BOLLIGER (A.). **Cryptococcosis in the Koala (Phascolarctos cinereus).**—*Aust. J. Sci.*, **23**, 3, pp. 86–87, 1 fig., 1960.

This is a joint report from Sch. Public Health and trop. Med. and Gordon Craig Res. Lab., Dept Surg., Univ. Sydney, on 3 cases of infection by *Cryptococcus neoformans* (all in females) found at autopsy in a series of about 16 unselected koalas. The fungus, though not uncommon in man, is rare in animals in Australia, and its significance in this connexion lies in its potential contribution to the threatened extinction of the koala in New S. Wales.

172. EMMONS (C. W.). **Prevalence of Cryptococcus neoformans in pigeon habitats.**—*Pub. Health Rep. Wash.*, **75**, 4, pp. 362–364, 1960. [8 ref.]

At the Nat. Inst. Allergy and Infectious Diseases, Bethesda, Md, virulent *C. neoformans* strs. were isolated by culture at 37° C. from 63 of 91 specimens of pigeon manure collected mostly in the Washington area. None of the specimens yielded *Histoplasma capsulatum* by injection into mice.

173. SEELIGER (H. P. R.). **Spaltung von Äskulin durch Sprosspilze, unter besonderer Berücksichtigung der Gattung Cryptococcus.** [Breakdown of aesculin by yeasts, with particular reference to the genus *Cryptococcus*.]—*Mykosen*, **3**, 3, pp. 69–77, 1 fig., 1960.

A number of yeasts produce arbutinase and aesculinase. At the Hygienisches Inst., Friedrich Wilhelms Univ., Bonn, a test for aesculinase production was useful in the diagnosis of *Cryptococcus* spp., as *C. neoformans* strs. were always negative when the evaluation was made at 24–48 hr.

174. RHOADES (E. R.) & MUCHMORE (H. G.). **The effect of amphotericin on the respiration of Cryptococcus.**—*Antibiot. Ann. 1959–1960*, pp. 619–621, 1 graph, 1960.

At Okla Univ. Sch. Med. and Veterans Administration Hosp., Okla, the O uptake of resting *C. neoformans* cells was decreased by amphotericin B at 1·0–10·0 μg./ml. The same concs. of the antibiotic inhibited the increase in O uptake on adding glucose to the resting cells.

175. GADEBUSCH (H. H.) & JOHNSON (J. D.). **Decomposition of the capsular polysaccharide of Cryptococcus neoformans 3723 by a soil microorganism.**—*Naturwissenschaften*, **47**, 14, pp. 329–330, 1960.

The organism responsible for the above-mentioned operation in *in vitro* studies at the Veterans Administration Hosp., Ann Arbor, Mich., is tentatively identified as *Alcaligenes* sp. It is a non-motile, pleomorphic, non-acid- or gas-producing Gram- rod, forming glistening, cream to white colonies on tryptose agar, and growing only at pH 6·3–7·2 at an opt. temp. of 28° C.

176. GADEBUSCH (H. H.). **Infra-red spectra of capsular polysaccharides from thirteen strains of Cryptococcus neoformans.**—*Nature, Lond.*, **185**, 4713, pp. 610–612, 2 graphs, 1960. [*B.H.*, **35**, p. 556.]

In this study at the Veterans Administration Hosp., Ann Arbor, Mich., no strain

differences were detected and it is concluded that infra-red spectrometry is unlikely to replace serology [cf. **1**, No. 1637] for capsular type identification.

177. Batista (A. C.), Silveira (J. S.), & Coêlho (R. P.). **Criptococose genital feminina.** [Genital cryptococcosis in Women.]—*Hospital (Rio de J.)*, **57**, 2, pp. 365–376, 12 fig., 1960. [Engl., Fr. summ.]

At the Univ. Recife, vaginitis from which *Cryptococcus albidus* (2 cases), *C. diffluens* (2), and *C. laurentii* (1) were isolated was cured by a 10-day course of vegex (cabimycin), 1 vaginal tablet (50,000 units) daily.

178. Matthews (J. H.). **Histoplasmosis.**—*W. Va med. J.*, **56**, 5, pp. 167–169, 1960.

From his experience of the varied manifestations of pulmonary infection by *Histoplasma capsulatum* at the Veterans Administration Hosp., Oteen, N. Carol., the author concludes that the fungus is like the tubercle bacillus able to cause any type of radiographic lesion and possibly an even wider range of clinical symptoms.

179. Sinn (C. M.). **Amphotericin B in bilateral cavitary histoplasmosis.**—*J. Amer. med. Ass.*, **173**, 11, pp. 1220–1222, 5 fig., 1960.

Administration of amphotericin B brought about dramatic improvement in a case of chronic bilateral cavitary histoplasmosis, which demonstrated the tendency for this condition to heal with pulmonary fibrosis, bronchial distortion, and emphysema. Early initiation of specific therapy might prevent these late sequelae.

180. Lunn (H. F.). **A case of histoplasmosis of bone in East Africa.**—*J. trop. Med. Hyg.*, **63**, 8, pp. 175–180, 9 fig., 1960. [21 ref.]

The case-history of a 13-yr.-old native girl suffering from an unusual type of osteomyelitis of the left tibia, with a metastatic abscess in the right index finger, is reported from the Makerere Coll. med. Sch., Kampala, Uganda. Full investigation revealed disseminated lesions caused by *Histoplasma duboisii*. A satisfactory recovery was made after surgical extirpation of the infective foci in the bone and a course of therapy with diamino-diphenyl-sulphone (100 mg./day for 2 months and 200 for a further 10).

181. Gellert (E. A.). **A case of histoplasmosis successfully treated with amphotericin B.**—*E. Afr. med. J.*, **37**, 7, pp. 501–507, 1960.

The patient was a 56-yr.-old male European suffering from lesions (attributed to infection [by *Histoplasma capsulatum*] on histological evidence) on the right aryepiglottic fold and tongue, severe general malaise, enlargement of the spleen and liver, and high fever. His work involved travelling in E. Africa. Amphotericin B was the only medicament of a number tried that elicited a favourable response.

182. Gellert (A.). **Disseminated histoplasmosis.**—*Brit. med. J.*, **2**, 5191, p. 70, 1960. [Letter.]

Records a case for Kenya. No cultures obtained.

183. Abildgaard (C. F.) & Taylor (R. L.). **Generalized histoplasmosis in a Panamanian Infant : case report.**—*Amer. J. trop. Med. Hyg.*, **9**, 4, pp. 400–401, 1960.

Histoplasma capsulatum was isolated from the bone marrow and blood of a 7-month-old male infant despite the negative results of a skin test and chest X-ray.

184. Dutta-Choudhuri (R.) & Mukherji (D.). **Histoplasmosis with the report of a case simulating carcinoma.**—*Indian J. Derm.*, **5**, 2, pp. 29–31, 4 fig., 1960.

A 60-yr.-old male Hindu patient at the Chiltaranjan Cancer Hosp., Calcutta, recovered from an ulcerated swelling in the lower left gum and enlargement of the

corresponding submandibular lymph node, caused by *Histoplasma capsulatum*, after therapy with penicillin (5,500,000 units) and streptomycin (5·5 g.).

185. Earle (J. H. O.), Highman (J. H.), & Lockley (Eunice). **A case of disseminated histoplasmosis.**—*Brit. med. J.*, **1**, 5173, pp. 607–610, 4 fig., 1960. [34 ref. *B.H.*, **35**, p. 772.]

A detailed report of what is claimed as the 4th British case of disseminated histoplasmosis (*Histoplasma capsulatum*), a 62-yr.-old man for 30 yr. resident in India, is made from the Royal Masonic Hosp., London. Two months after the onset of symptoms, loss of weight, anorexia and lassitude, granulomatous lesions were removed from his tongue and anal regions and the wounds healed. Death occurred 9 weeks after he was admitted to hospital a 2nd time and necropsy showed gross destruction of the adrenals and considerable involvement of the kidneys. Serum taken on the day of death was anti-complementary and cultures from the blood clot were negative. Histoplasmosis was diagnosed post-mortem from sections of the kidneys but the organism was not cultured.

186. Rodan (K. S.). **Disseminated histoplasmosis.**—*Brit. med. J.*, **1**, 5181, pp. 1276–1277, 1960.

From Southlands Hosp., Shoreham-by-Sea, Sussex, a presumed case of disseminated histoplasmosis (*Histoplasma capsulatum*) in a male aged 55 yr. who had lived in India and Malaya, is reported.

187. Rhoades (H. E.), Helper (L. C.), & Fritz (T. E.). **Canine histoplasmosis.**—*J. Amer. vet. med. Ass.*, **136**, 4, pp. 171–173, 2 fig., 1960. [*V.B.*, **30**, No. 2143.]

At the Dept. Vet. Path. Hyg., Univ. Ill., Urbana, *Histoplasma capsulatum* was isolated from the faeces of a 2-yr.-old Chihuahua dog with a history of persistent diarrhoea, and also from the liver, spleen, lungs, mesenteric lymph nodes, and bronchial lymph nodes. The cellular reaction was granulomatous. The mesenteric and ileocaecal lymph nodes were enlarged, and there was severe haemorrhagic catarrhal enteritis with focal ulceration throughout the intestine.

188. Saslaw (S.), Carlisle (H. N.), & Sparks (Joann). **Experimental histoplasmosis in Monkeys.**—*Proc. Soc. exp. Biol., N.Y.*, **103**, 2, pp. 342–344, 1960. [*V.B.*, **30**, No. 2503. *B.H.*, **35**, p. 654.]

Monkeys (*Macaca mulatta*) inoculated at Dept Med., Ohio State Univ., Columbus, with the yeast phase of *Histoplasma capsulatum* via the intravenous and intratracheal routes contracted severe symptoms. A milder process developed following intranasal inoculation. Intragastric tests were unsuccessful.

189. Woods (A. C.) & Wahlen (H. E.). **The probable role of benign histoplasmosis in the etiology of granulomatous uveitis.**—*Amer. J. Ophthal.*, **49**, 2, pp. 205–220, 14 fig. (2 col.), 1960.

From the results of an exploratory study at the Johns Hopkins Hosp., Baltimore, there appears to be an increased incidence of positive histoplasmin reactors in patients with granulomatous uveitis as compared with the non-granulomatous form of the disease and in relation to the normal population. Thus 19 of 62 patients displayed a peculiar and consistent pattern of peripheral lesions, discrete, atrophic, sparsely or not at all pigmented, followed by the development of a cystic lesion at or adjoining the macula. About half these central lesions were complicated by a 2nd surrounding haemorrhagic reaction. In 9 of these subjects the trilogy of histoplasmin sensitivity, pulmonary calcification, and anergy to tuberculin was present. In the remainder the picture was less definite but the ocular symptoms were characteristic, and a benign systemic infection by *Histoplasma capsulatum* was undoubtedly harboured.

190. Viswanathan (R.), Chakravarty (S. C.), Randhawa (H. S.), & De Monte (A. S. H.). **Pilot histoplasmosis survey in Delhi area.**—*Brit. med. J.*, **1**, 5170, pp. 399–400, 1960. [*B.H.*, **35**, p. 772.]

Histoplasmin testing by the Vallabhbhai Patel Chest Inst., Univ. Delhi, India, of 747 inhabitants, all over 5-yr.-old, of rural, riverine, and urban areas showed 2·9, 12·3, and 4·9% positive reactors, respectively. Cultural and serological examinations of histoplasmin positive reactors were all negative. Of 26 positive reactors 17 had multiple pulmonary calcifications and 7 of a further 29 of 30,000 examined by chest X-ray having similar calcifications were found to be histoplasmin positive and to show no evidence of any other disease of the lungs.

191. Miya (F.). **The properdin system in host resistance.**—*Diss. Abstr.*, **20**, 8, pp. 3019–3020, 1960.

At Univ. Utah yeast phase cells of *Histoplasma capsulatum* labelled with P^{32} were used to study the effects of humoral factors, including complement, properdin, and antibody, on the ingestive and digestive activities, *in vitro*, of peritoneal phagocytes from normal and immunized mice. In all cases a heat labile component (complement and/or properdin) not only enhanced the rate of phagocytosis by normal and 'immune' phagocytes, but also caused significant enhancement of the digestive activity of the immune cells as compared with normal phagocytes. Specific antibody appeared to play no significant role in the phagocytic or cytopeptic activities of either normal or immune phagocytes.

192. Hill (G. A.) & Marcus (S.). **Study of cellular mechanisms in resistance to systemic Histoplasma capsulatum infection.**—*J. Immunol.*, **85**, 1, pp. 6–13, 4 graphs, 1960.

An isotope assay method is described for following the process of intracellular digestion (cytopepsis) in macrophages *in vitro* and *in vivo*. In conjunction with morphological and cultural techniques, it has been used at the Coll. Med., Univ. Utah, Salt Lake City, for the study of experimentally induced infection by *H. capsulatum* in normal and immunized white mice. Immunization was shown to evoke a measure of auxocytopepsis which was independent of mediation by circulating or added antibody.

193. Johnson (R. W.) & Scherago (M.). **The effect of histoplasmin in vitro on the migration of leucocytes from Guinea Pigs experimentally infected with Histoplasma capsulatum.**—*Amer. Rev. Respir. Dis.*, **81**, 1, pp. 96–99, 1960.

The leucocytes of guinea-pigs inoculated at Dept Bact., Univ. Ky, Lexington, with about 10,000 living yeast-phase cells of *H. capsulatum* developed significant specific sensitivity *in vitro* to a 1:1,000 dilution of histoplasmin. This reaction appeared during the 3rd week after inoculation, while inhibition of leucocyte migration occurred as early as the 2nd in 2 of 4 animals tested and in all after the 4th week. Both skin and leucocyte sensitivity persisted throughout the 10-week period of the study. Reactions to dilutions of 1:5,000 or 1:10,000 were not consistently significant. The sensitivity to histoplasmin is regarded as specific since no comparable effect on leucocyte migration was exerted by brucellergen.

194. Cozad (G. W.) & Larsh (H. W.). **A capillary tube agglutination test for histoplasmosis.**—*J. Immunol.*, **85**, 4, pp. 387–390, 1 graph, 1960.

The test herein described from the Dept Plant Sci., Univ. Okla., Norman, involves the use of stained particles from disintegrated yeast-phase cells of *Histoplasma capsulatum* as antigen [**3**, No. 904]. The material was treated with Luoto's modification of the Harris stain, using an increased amount of haematoxylin (*J. Immunol.*, **71**, p. 226, 1953). Serum specimens from rabbits reinfected with yeast

cells of the fungus were used to develop and standardize the test and determine its value in comparison with complement-fixation. The tubes measured 7 cm. in length with an inside diam. of 0·5–0·9 mm., $\frac{1}{3}$ being filled with antigen and an equal amount of serum added by capillary action. They were inverted, placed in a vertical position in plasticine clay, and incubated at room temp. for 1 hr. A positive reaction was indicated by the appearance of blue-black, macroscopic clumps along the capillary column. The highest dilution of serum giving agglutination was recorded as the titre. Agglutination in the presence of 1:5 dilution of serum or higher constituted a positive test.

High levels of agglutinins were found to occur during the active stage of the disease but they diminished as the symptoms subsided when the capillary-tube method was used. Complement-fixing titres also rose on exposure of the animals to living inocula, but with this technique they persisted at a high level after the agglutinins subsided.

Encouraging results were also obtained in the application of the tube method to sera from human cases of histoplasmosis. It is simple and rapid in performance and the stained antigen is easily prepared and remains stable for a long time.

195. Howard (D. H.). **Effect of mycostatin and fungizone on the growth of Histoplasma capsulatum in tissue culture.**—*J. Bact.*, **79**, 3, pp. 442–449, 2 fig., 1959.

At Dept Infectious Diseases, Sch. Med., Univ. Calif., Los Angeles, mycostatin [nystatin], at 250 units or more ml., was toxic to macrophages when added to cultures of *H. capsulatum* in mouse peritoneal exudates, but at 100 units or less it was relatively non-toxic to these cells. An amphotericin B preparation was markedly toxic at 10 μg. ml., partially toxic at 5–0·5 μg., and relatively non-toxic at 0·1–0·05 μg.

The destructive activity of the fungus in the cell cultures was completely suppressed by the addition of 25 units nystatin or 0·1 μg. amphotericin B 24 hr. after initial infection.

Intracellular structures resembling yeast cells were present in the macrophages in the cultures to which the fungicides had been added. These were interpreted as drug-inhibited fungal cells undergoing degeneration.

Neither fungicide could completely inhibit extracellular multiplication of *H. capsulatum* in cultures of mouse macrophages without affecting in some degree the intracellular multiplication of the parasite.

196. Edwards (M. R.), Hazen (Elizabeth L.), & Edwards (G. A.). **The micromorphology of the tuberculate spores of Histoplasma capsulatum.**—*Canad. J. Microbiol.*, **6**, 1, pp. 65–70, 10 pl., 1960.

A report from N.Y. State Dept Health, Albany, of an electron microscopic study of stages in the development of tuberculate spores of *H. capsulatum* [cf. **1**, No. 1188] from small, smooth-contoured forms. The structure of the 4 layers comprising the spore wall is described in detail. The mechanism of cell wall enlargement from the peripheral, radially orientated filamentous layer within the outermost is pertinent to the diagnostic characteristics of these spores, which are considered to be chlamydospores, as defined by Langeron.

197. Ajello (L.), Briceño-Maaz (T.), Campins (H.), & Moore (Jane C.). **Isolation of Histoplasma capsulatum from an Oil Bird (Steatornis caripensis) cave in Venezuela.**—*Mycopathologia*, **12**, 3, pp. 199–206, 1 fig., 1 map, 1960. [34 ref.]

This note from the Communicable Disease Center, Atlanta, Ga. records the presence of *H. capsulatum* in 2 of 15 soil samples from the cave of the Guacharos, Caripe, Venezuela, chosen for study because it is inhabited by oil birds [cf. **2**, Nos. 1828, 1829].

Microsporum gypseum and *Allescheria boydii* were also isolated.

198. Edwards (Phyllis Q.), Ajello (L.), Moore (Jane), Jacobs (C. F.), & Aronson (D. L.). **Soil sampling in an urban focus of histoplasmin sensitivity.**—*Amer. Rev. resp. Dis.*, **81**, 5, pp. 747–751, 1 map, 1960.

Of nearly 600 soil samples collected from some 1,300 sites throughout the city of Dalton, Ga, only 1 yielded *Histoplasma capsulatum* [**3**, No. 906]—the 1st time it has been recovered from this source in the State. The high proportion of histoplasmin-sensitive subjects among the healthy population of a particular residential area in the city suggests that hitherto unrecognized sources of infection may be implicated.

199. Van der Bijl (W.). **Tornado and histoplasmosis.**—*Bull. Amer. meteorol. Soc.*, **40**, 10, pp. 519–520, 1959. [*Biol. Abstr.*, **35**, No. 38889.]

An evaluation of the tornado-histoplasmosis hypothesis (N. E. Manos, *Ibid.*, **39**, pp. 460–468, 1958) and a reply (p. 521) by Manos.

200. Machado (J.) & Miranda (J. L.). **Considerações relativas a blastomicose sul-americana. Localizações, sintomas iniciais, vias de penetração e disseminação em 313 casos consecutivos.** [Considerations on South American blastomycosis. Sites of the lesions, initial symptoms, ports of entry, and mechanism of dissemination in 313 cases.]—*Hospital* (*Rio de J.*), **58**, 1, pp. 99–137, 1960. [Engl. summ.]

Of 313 cases of S. American blastomycosis (*Paracoccidioides brasiliensis*) in Rio de Janeiro, Brazil, 87% were disseminated. The oral cavity was involved in 80·6% as were the lungs. The first lesions were oropharyngeal in 56·8% of the cases but remained localized in only 8%. Of 248 cases with X-ray visible pulmonary lesions, 60 (19·6%) were considered primitive pulmonary infections and 188 secondary infections due to haematogenous dissemination from primary lesions in the oropharynx (138 cases), larynx (20), lymph nodes (14), or skin (14). In 2 autopsies lesions of the adrenals were found and in 2 cases Addison's syndrome was evident.

201. Altério (D. L.) & Negro (G.). **Blastomicose sul-americana associada à moléstia de Hodgkin.** [South American blastomycosis and Hodgkin's disease.] —*Hospital* (*Rio de J.*), **57**, 1, pp. 95–102, 1960. [Engl. summ.]

Report of a case with pulmonary and oropharyngeal lesions complicated 12 yrs. later with Hodgkin's disease. The patient did not improve after administration of sulphamides and amphotericin B although *Paracoccidioides brasiliensis* disappeared from the sputum.

202. Boccalandro (I.) & Albuquerque (F. J. M.). **Ictericia e comprometimiento hepático na blastomicose sul-americana.** [Jaundice and liver involvement in South American blastomycosis.]—*Rev. paul. Med.*, **56**, 5, pp. 350–366, 1960. [Engl. summ.]

Of 10 cases of jaundice associated with *Paracoccidioides brasiliensis* infection, 6 were due to compression of the choledocus by involved lymph nodes of the hepatic hylum. In 2 cases fibrosis of the choledocus and of the cystic duct was the cause of the obstructive jaundice which developed some months after successful treatment with sulfadiazine in 1 case and with amphotericin B in the other. In 2 other cases no obstacles were found in the extra-hepatic bile ducts and a light jaundice was considered to be hepatocytic. Diagnosis was particularly difficult because only 1 patient showed oropharyngeal lesions and signs of pulmonary involvement were usually absent; the 1st symptoms were abdominal and back pains and jaundice.

203. Rotberg (A.). **Blastomicose sul-americana gomosa micetomatoide.** [Mycetoma-like lesions in South American blastomycosis.]—*Rev. Asoc. méd. argent.*, **74**, 5, pp. 344–345, 1960. [Engl. summ.]

In São Paulo, Brazil, a case was recorded with ulcero-vegetant and fistulous lesions

of the foot. X-rays showed lesions of the bones. A fungus seen in biopsies was identified with *Paracoccidioides brasiliensis* but no cultures were obtained. No lesions were recorded in the oropharynx or lungs.

204. Schmidt (B. J.) & Hoxter (G.). **Estudo electroforético do sôro em 16 casos de blastomicose sul-americana.** [Electrophoretic analysis of the serum in 16 cases of South American blastomycosis.]—*Rev. Hosp. Clin. Fac. Med. S. Paulo*, **15**, 1, pp. 64–74, 1960. [Engl. summ.]

The more frequent changes were: lowered albumin levels, normal or elevated α-1 and α-2 albumins especially in acute cases, normal or decreased β-globulin and in all cases increased γ-globulin. Protein-bound lipids were lower in the chronic cases. Protein-bound carbohydrates increased in the α-fraction and decreased in the γ-fractions.

205. Tranchesi (J.), Campana (C. L.), & Sampaio (S. A. P.). **Alterações electrocardiográficas observadas durante o tratamento da blastomicose pela anfotericina B.** [Electrocardiographic alterations during the treatment of South American blastomycosis with amphotericin B.]—*Rev. Hosp. Clin. Fac. Med. S. Paulo*, **15**, 2, pp. 125–130, 1960. [Engl. summ.]

The main features attributed to amphotericin B are stimulation of the sinus node, retarding of auriculo-ventricular conduction, increase of the automatism giving rise to extrasystoles, and modifications of the ventricular repolarization. All are reversible.

206. Machado (J.) & Miranda (J. L.). **Considerações relatives a blastomicose sul-americana. Do comportamento das proteínas séricas.** [Considerations on South American blastomycosis. The serum proteins.]—*Hospital* (*Rio de J.*), **57**, 6, pp. 919–938, 1960. [Engl. summ.]

At Inst. Oswaldo Cruz, Rio de Janeiro, a study of 122 cases showed that infection by *Paracoccidioides brasiliensis* produces a decrease of albumins and an increase of globulins and that the levels revert to normal after specific treatment. The variations are not constant and the degree of activity and dissemination have marked influence.

207. Cavazzutti (A. M.), Vucetich (M.), & Mujtar (M.). **Um caso de rinosporidiosis.** [A case of rhinosporidiosis.]—*Día méd.*, **32**, 30, pp. 844–846, 1960.

Report of a case of *Rhinosporidium seeberi* infection in a man from the province of Buenos Aires, Argentina.

208. Garrett (H. D.) & Robbins (J. B.). **An unusual occurrence of sporotrichosis.**—*Arch. Derm., Chicago*, **82**, 4, pp. 570–571, 1960.

Eight cases of primary cutaneous sporotrichosis (all confirmed by culture) were seen by Dr. Robbins (1900, North Oregon) in one household at Juarez, Chihuahua, Mexico, the members of which were engaged in handling pottery from Guadalajara, Jalisco. Suspicion fell on the coarse grass [cf. **3**, No. 1081] in which the pottery was packed, and pulverized samples thereof, plated on Sabouraud glucose agar containing cycloheximide [actidione], yielded *Sporotrichum schenckii*.

209. Kaplan (W.) & Ivans (M. Sue). **Fluorescent antibody staining of Sporotrichum schenckii in cultures and clinical materials.**—*J. invest. Derm.*, **35**, 3, pp. 151–159, 7 fig., 1960.

At the Communicable Disease Center, Chamblee, Ga, the authors used homologous fluorescein-labelled rabbit antiglobulins [cf. **3**, No. 1210] to stain fungal elements of yeast- and mycelial-phase cultures of 8 strs. of *S. schenckii*. Conjugates prepared from normal rabbit globulins did not stain. The immunological specificity of the

staining reactions was further verified by inhibition and absorption techniques, and cross reactions with heterologous organisms presented no problem. This technique revealed *S. schenckii* cells in lesion exudates from experimentally infected mice, and from 3 of 4 cases of human infection which had been diagnosed by culture.

210. Batista (A. C.) & Maia (H. S.). **Uma nova doença fungica de peixe ornamental.** [A new fungus disease of ornamental Fish.]—*An. Soc. biol. Pernambuco*, **16**, 1, pp. 153–159, 1959.

A granuloma was observed anteriorly to the dorsal 'aleta' in a specimen of *Carassius auratus*. A fungus cultivated on Sabouraud glucose agar plus achromycin is considered as the type species of a new gen.: *Gibellulopsis piscis*.

211. Pritchard (W. R.) & Wassenaar (P. W.). **Studies on the syndrome called mycotic stomatitis of Cattle.**—*J. Amer. vet. med. Ass.*, **135**, 5, pp. 274–277, 2 fig., 1959.

In this note from the Dept Vet. Sci., Univ. Fla, it is stated that 'mycotic stomatitis', a condition of unknown aetiology, is one of the most widespread and commonly occurring stomatitides of cattle in the U.S.A. The chief clinical signs of this syndrome, seen in numerous cases in Indiana and Florida over a 5-yr. period, were necrotic stomatitis, epidermal exfoliation, and lameness. The disease could not be transmitted experimentally to cattle, horses, sheep, goats, mice, rats, or guinea-pigs inoculated with scrapings from lesions, blood, or faeces from naturally affected cattle.

Serum-neutralizing or complement-fixing antibodies for the local strs. of the disease were not detectable in animals which had recovered, which strongly suggests that the disease is not a form of vesicular stomatitis.

The authors did not study the role of fungi as possible causative agents, but did observe that [unspecified] fungi were especially prevalent on pasture plants during the periods when mycotic stomatitis occurred. However, 2 cases were observed in cattle confined to barns and given an apparently mould-free diet: both of these cases occurred during the 'season'. In 1957 cases were observed in S. Fla in dairy cattle fed mouldy forage obtained from an area in N. Fla where many cases were occurring: no other cases were reported within a 100-mile radius of the farm in question.

212. Sotomayor (C.) & Madrid (G.). **Hongos del aire en la ciudad de Hermosilla.** [Fungi of the air in the city of Hermosilla.]—*Rev. lat.-amer. Microbiol.*, **2**, 4, pp. 207–209, 1959. [Engl. summ.]

Petri dishes of Sabouraud glucose agar were exposed to the air for 5 min. during the morning, afternoon, or night. Of 747 colonies studied 40% were *Penicillium* spp., 16·4% *Aspergillus*, 14·1% *Syncephalastrum*, 7·3% *Hormodendrum*, and 6% *Alternaria* [**3**, No. 925].

213. Batista (A. C.), Lima (J. A.), & Souza (R. G.). **Fungos imperfeitos frequentas no ar atmosferico.** [Some imperfect fungi frequently isolated from the atmosphere.]—*Publ. Inst. Micologia, Univ. Recife, Pernambuco*, 265, 30 pp., 1960. [Engl. summ.]

A description of *Hyalopus spinosus* [*Cephalosporium spinosum*], *Penicillium waksmanii*, *Phoma acuta*, *P. gentianae*, *Phomopsis pustulata*, *Paecilomyces carneus*, *Stachybotrys alternans* [*S. atra*], *Stemphylium alboatrum*, and *Zygosporium parasiticum*.

214. **Report of the Rothamsted Experimental Station for 1959.**—288 pp., 1 pl., 1 map, 1960.

P. H. Gregory & Maureen E. Bunce, (p. 109–110) reporting work on the myco-

floral succession in hay, state that good samples had only 0·4 million spores/g., though poorer ones had up to 20 million *Aspergillus glaucus* spores. Hays associated with human and animal diseases had up to 85 million fungus spores or 1,500 million bacteria and actinomycete spores/g. The fungi present in these inferior hays are mostly thermophilic.

215. Cameron (E. A.) & French (E. B.). **St. Anthony's fire rekindled : gangrene due to therapeutic dose of ergotamine.**—*Brit. med. J.*, **2**, 5191, pp. 28–30, 2 fig., 1 diag., 1960.

A case report from E. General Hosp., Edinburgh, with an emphasis on potential dangers of ergot preparations.

216. **Facial eczema research.**—Report of the Department of Scientific and Industrial Research, New Zealand, for the year ended 31 March, 1960, pp. 30–32, 1960.

Most of the facts in this brief review have been noticed [cf. **3**, No. 1677].

Pithomyces chartarum [**3**, No. 1551] is accepted in place of *Sporidesmium bakeri* for the fungus involved. The lipids of *P. chartarum* and related fungi are compared.

217. Ross (D. J.). **A study of the physiology of Pithomyces chartarum (Berk. and Curt.) M. B. Ellis. 2. Some factors influencing sporulation in culture.**—*N.Z. J. Sci.*, **3**, 3, pp. 441–452, 1960.

In further studies on *P. chartarum* spore production was favoured at pH 6–7 and by the addition of Ca. More spores were produced on media containing organic N compounds than on a potato–carrot extract medium.

218. Packard (R. Q.). **The size, shape, and density of spores of Pithomyces chartarum (Berk. and Curt.) M. B. Ellis.**—*N.Z. J. Sci.*, **3**, 3, pp. 412–414, 2 fig., 1960.

Following measurements of air-dry and wet spores of *P. chartarum* it was concluded that the spores should be more mobile in air than morphologically similar pollen grains.

219. Dodd (D. C.). **Photosensitivity diseases in New Zealand. XXI. The susceptibility of the Rabbit to facial eczema.**—*N.Z. J. agric. Res.*, **3**, pp. 491–497, 7 fig., 1960.

Facial eczema caused by *S[poridesmium] bakeri* [*Pithomyces chartarum*] in the rabbit is similar to that in the sheep and guinea-pig but is more acute and develops more rapidly. There is an acute cholangitis characterized by periductal oedema, fibrosis, and cellular infiltration. The extra-hepatic biliary system is markedly affected. The extent of oedema and fibrosis depends on the size of the duct, the smallest branches often being unaffected.

220. Grzymała (S.). **Otravy houbami v Polsku.** [Mushroom poisoning in Poland.] —*C.C.H. mykol. Sborn.*, **35**, pp. 147–152, 1959.

A detailed review of mushroom poisoning in Poland during 1953–57. Of the 474 cases reported, 255 were treated in hospital, and 32 were fatal. The 17 fungi responsible and the course of illness in the various cases are described.

221. Michaux (H.). **La psilocybine (expériences et autocritique).** [Psilocybin (experiments and subjective criticism).]—*Rev. Mycol., Paris*, **25**, 1, pp. 52–68, 1960.

A detailed account of the effects produced upon the writer by psilocybin [cf. **3**, Nos. 777, 1540], prepared from *Psilocybe mexicana.*